HOWARD IRON WORKS

BUFFALO, N. Y.

ESTABLISHED 1847.

NOTICE.

As this Catalogue is to take the place of all Catalogues previously issued by this company, we would request that you destroy all old copies you may have, and thus prevent the possibility of mistakes.

Yours respectfully,

HOWARD IRON WORKS.

HAND, BELT POWER, HYDRAULIC AND ELECTRIC ELEVATORS FOR PASSENGERS AND FREIGHT. . . . .

GENERAL IRON FOUNDERS AND MACHINISTS.

226

HOWARD IRON WORKS

BUFFALO, N. Y.

ESTABLISHED 1847.

ILLUSTRATED CATALOGUE

.... OF ....

PULLEYS, HANGERS, SHAFTING,
VISES, GRINDSTONE FRAMES and
BOLT CUTTERS.

1899

..... MANUFACTURERS OF .....

Printers', Book Binders', Paper Box Makers' Machinery

HAND, BELT POWER, HYDRAULIC
AND ELECTRIC ELEVATORS FOR
PASSENGERS AND FREIGHT. . . . .

GENERAL IRON FOUNDERS AND MACHINISTS.

BUFFALO:

BAKER, JONES & CO., PRINTERS AND BINDERS.

1899.

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THE high standard which we have maintained in the manufacture of our entire product, and the many improvements which we are constantly adding, justifies us in assuring patrons of superior goods, which for design and workmanship cannot be excelled.

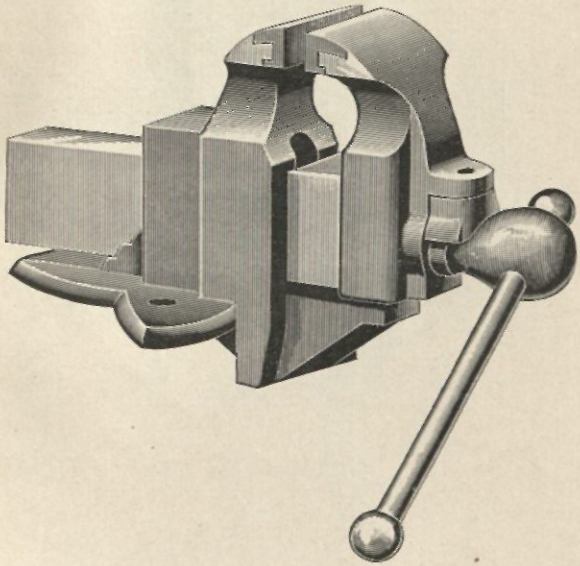
Our Pulleys, long celebrated for their great strength, with lightness and handsome appearance, are perfectly turned, balanced and carefully inspected before leaving the works, and are in consequence of universal perfection.

Our Adjustable Journal Bearings are self-oiling, babbitted with the best quality Babbitt Metal, and are so constructed that the Shaft can be laid in after the Hanger Frame is put up, and lines of Shafting taken out of the boxes without removing the Hanger Frames. They also swivel, and are adjustable horizontally or vertically.

Particular attention is also called to our line of Vises and Grindstone Frames. In these two departments we manufacture standard designs of unquestioned merit.

For the convenience of patrons we have added in the closing pages of the Catalogue Tables of Information which we believe will be fully appreciated.

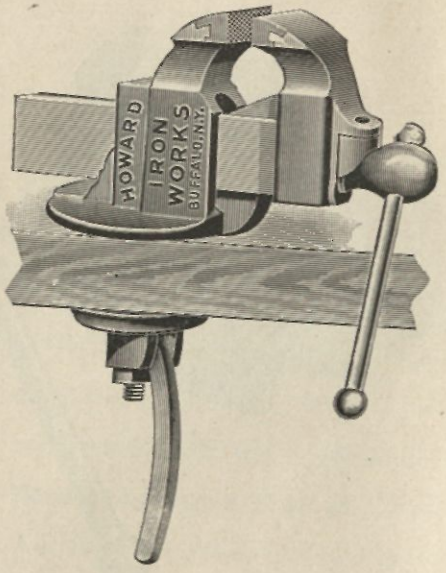
DISCOUNTS from list will be quoted on application. All contracts and sales contingent upon strikes, accidents or causes beyond our control. All discounts made on prices contained in this Catalogue are subject to change without notice.



HOWARD PARALLEL BENCH VISE.

FIXED.

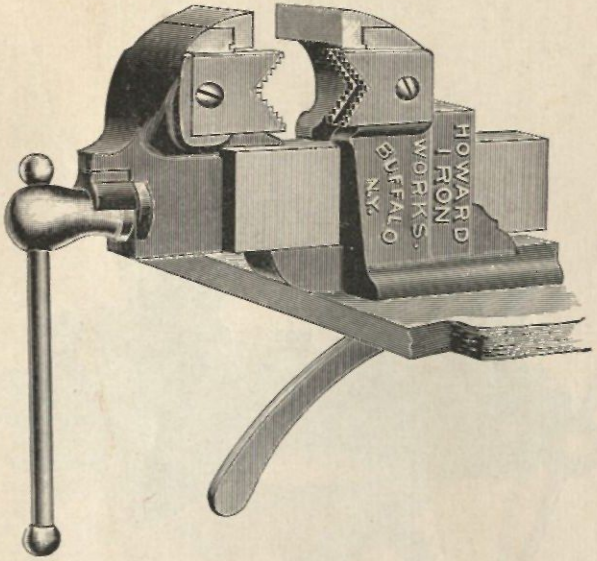
No. 0,	Length of Jaw,	3 inches,	weight,	26¾ lbs.,	. . . . .	$ 6.00
" 1,	"	" 3½ "	"	32 "	. . . . .	7.00
" 2,	"	" 4 "	"	44 "	. . . . .	8.50
" 3,	"	" 4½ "	"	54 "	. . . . .	10.00
" 4,	"	" 5 "	"	105 "	. . . . .	13.00
" 5,	"	" 6 "	"	123½ "	. . . . .	25.00
" 6,	"	" 7 "	"	189 "	. . . . .	28.50



HOWARD PARALLEL BENCH VISE.

SWIVEL.

| | | |



HOWARD SWIVEL VISE.

WITH PIPE ATTACHMENT.

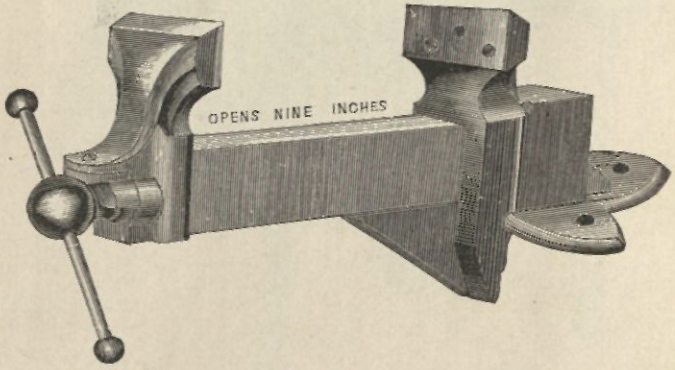
These vises are made extra strong with steel pipe jaws, and so constructed that the pipe attachment can be used on either the right or left side of the vise as desired.

They are a very useful article, and should be in every engine-room, where they will save their cost in a very short time in making small repairs.

No. 1.—3½-inch Jaw, weight, 48 lbs., ... $16.00
Will take pipe up to 2 inches in diameter.

No. 3.—4½-inch Jaw, weight, 63 lbs., ... 20.00
Will take pipe up to 3 inches in diameter.

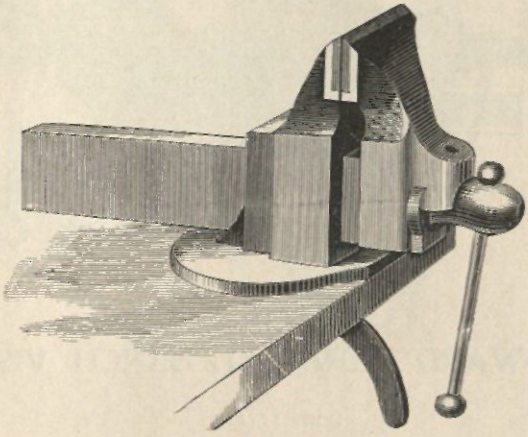
No 5.—6-inch Jaw, weight, 147 lbs., ... 35.00
Will take pipe up to 4 inches in diameter.



HOWARD COACH MAKERS' VISE.

FIXED.

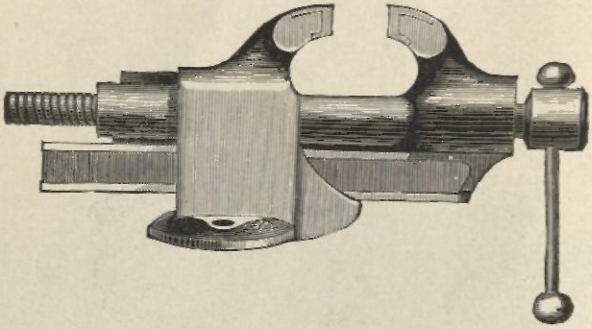
No. 2.—Length of Jaw, 4 inches, weight, 37½ lbs., ... $10.00



HOWARD COACH MAKERS' VISE.

SWIVEL.

No. 1.—Length of Jaw, 4 inches, weight, 45½ lbs., ... $12.50

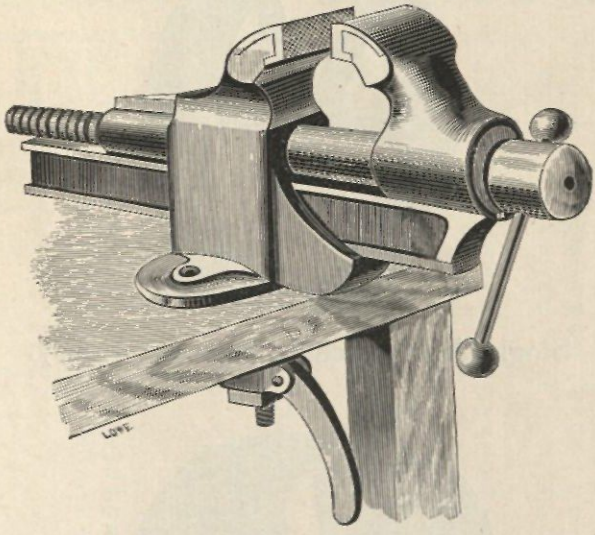


HOWARD PARALLEL BENCH VISE.

(NEW STYLE.)

FIXED.

No. 20.—2-inch Jaw, weight,	7 lbs.,	$ 4.00
" 25.—2½ " " "	12 "	5.00
" 30.—3 " " "	21½ "	6.25
" 35.—3½ " " "	30½ "	7.00
" 40.—4 " " "	46½ "	9.00
" 45.—4½ " " "	58 "	11.75
" 50.—5 " " "	88 "	16.25
" 55.—5½ " " "	110½ "	20.00

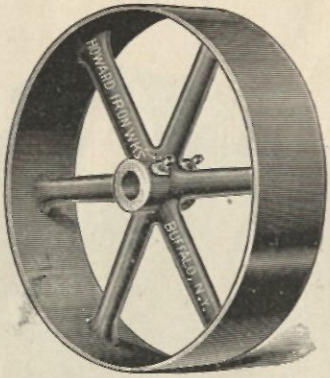


HOWARD PARALLEL BENCH VISE.

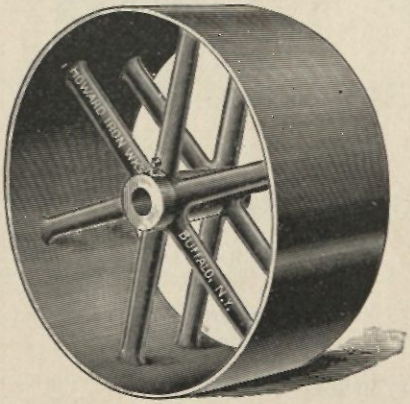
(NEW STYLE.)

SWIVEL.

No. 20.—2-inch	Jaw,	weight,	8	lbs,	. . . . .	$ 4.50
" 25.—2½	"	"	13	"	. . . . .	5.75
" 30.—3	"	"	24	"	. . . . .	7.00
" 35.—3½	"	"	34	"	. . . . .	8.25
" 40.—4	"	"	50	"	. . . . .	10.75
" 45.—4½	"	"	63	"	. . . . .	14.00
" 50.—5	"	"	96	"	. . . . .	19.25
" 55.—5½	"	"	118½	"	. . . . .	23.50



Single Arm Machine Moulded Pulley.



Double Arm Machine Moulded Pulley.

Pulleys with SPECIAL HUBS or with BORES disproportionate to their diameters will be charged extra.

In ordering Pulleys specify if they are to have CROWNING or STRAIGHT FACE and for SINGLE or DOUBLE BELT; also if they are to be KEY-SEATED or SET-SCREWED. Also be particular to give *diameter first* and then *width of face*, and whether the *face* is to be *straight* for shifting belt or *high in center* for non-shifting belt. Fast and loose Pulleys should always be high in center to keep belt in place.

MACHINE MOULDED PULLEYS.

Bored, Turned and Balanced, with Set Screws or Key Seats.

Dia. in Inches.	Face in Inches.	Single Belt.	Double Belt.	Dia. in Inches.	Face in Inches.	Single Belt.	Double Belt.	Dia. in Inches.	Face in Inches.	Single Belt.	Double Belt.
6	3	$1.95	$2.55	10	6	$3.40	$4.55	13	16		$12.40
	4	2.10	2.80		7	3.70	5.00		18		14.00
	5	2.30	3.10		8		5.50		20		15.70
	6	2.55	3.45		9		6 00	14	3	$3.25	4.20
	7		3.80		10		6.55		4	3.55	4.70
	8		4.15		11		7.10		5	3.90	5.30
	9		4.50		12		7.65		6	4.35	5.95
	10		4.85		14		8 90		7	4.70	6.55
	11		5.25		16		10.05		8	5.20	7.20
	12		5.65	11	3	2.70	3.55		9	5.60	7.90
7	3	2.10	2.75		4	2.95	3.95		10	6.10	8.60
	4	2.25	3.00		5	3.25	4.40		11		9.30
	5	2.50	3.35		6	3.60	4.90		12		10.00
	6	2.75	3.70		7	3.95	5.40		14		11.60
	7		4.05		8		5.95		16		13.25
	8		4.45		9		6.45		18		15.00
	9		4.85		10		7.05		20		16.80
	10		5.25		11		7.65	15	3	3.40	4.40
	11		5.70		12		8.20		4	3.75	5.00
	12		6.10		14		9.50		5	4.15	5.65
8	3	2 25	2.95		16		10.75		6	4.60	6.30
	4	2.45	3.20	12	3	2.85	3.75		7	5.05	6.95
	5	2.70	3.55		4	3.15	4 20		8	5.50	7.65
	6	2.95	3.95		5	3.50	4.70		9	5.95	8.40
	7		4.35		6	3.85	5.25		10	6.45	9.15
	8		4.75		7	4.20	5.80		11	6.95	9.90
	9		5.20		8	4.55	6 35		12		10.70
	10		5.70		9	4.95	6.95		14		12.35
	11		6.15		10		7.55		16		14.15
	12		6.60		11		8.15		18		16.00
	14		7.75		12		8.75		20		17.90
9	3	2.40	3.15		14		10.10	16	3	3.60	4.70
	4	2.60	3.45		16		11.50		4	3.95	5.30
	5	2.85	3.80		18		13 00		5	4.40	6.00
	6	3.15	4.25	13	3	3.05	3.95		6	4.90	6.70
	7	3.45	4.65		4	3.35	4.45		7	5.35	7.45
	8		5.10		5	3.70	5.00		8	5.85	8.20
	9		5.60		6	4.10	5.60		9	6.30	9.00
	10		6.10		7	4.45	6.20		10	6.85	9.90
	11		6.60		8	4.90	6.80		11	7.40	10.60
	12		7.10		9	5.25	7.45		12	8.00	11 45
	14		8.30		10		8.10		14		13.25
10	3	2.55	3.35		11		8.75		16		15 15
	4	2.75	3.70		12		9.40		18		17.15
	5	3.05	4.10		14		10.85		20		19.15

See additional prices for Tight and Loose, Split and Clamp Hub Pulleys on pages 29, 30, 31, 32.

MACHINE MOULDED PULLEYS.

Bored, Turned and Balanced, with Set Screws or Key Seats.

Diameter in Inches.	Face in Inches.	Single Belt.	Double Belt.	D'ble Arm. D'ble Belt.
17	3	$3.80	$ 5.00	
	4	4.20	5.65	
	5	4.70	6.40	
	6	5.20	7.15	
	7	5.70	7.90	
	8	6.20	8.75	
	9	6.75	9.60	
	10	7.30	10.45	
	11	7.90	11.30	
	12	8.50	12.25	
	14		14.15	
	16		16.15	
	18		18.25	
	20		20 40	
18	3	4.00	5.25	
	4	4.45	5.95	
	5	4.95	6.75	
	6	5.50	7.60	
	7	6.05	8.45	
	8	6.60	9.30	
	9	7.15	10.20	
	10	7.75	11.10	
	11	8 40	12.05	
	12	9 10	13.05	
	14		15.10	
	16		17.20	
	18		19.40	
	20		21.70	
19	3	4.25	5.55	
	4	4.70	6.30	
	5	5.25	7.15	
	6	5.85	8.10	
	7	6.45	9.00	
	8	7.05	9.95	
	9	7.65	10.95	
	10	8.30	11.95	
	11	9.00	12.95	
	12	9.75	14.00	
	14		16.25	
	16		18.50	
	18		20 90	
	20		23.35	$26.85

Diameter in Inches.	Face in Inches.	Single Belt.	Double Belt.	D'ble Arm. D'ble Belt.
19	22		$25.80	$29.65
	24		28.50	32.77
	26		31.30	36.00
	28		34.20	39.35
	30		37.30	42.90
20	3	$ 4.45	5.85	
	4	4.95	6.65	
	5	5.55	7.55	
	6	6.20	8.60	
	7	6.85	9.60	
	8	7.50	10.60	
	9	8.15	11.70	
	10	8.85	12.80	
	11	9.60	13 90	
	12	10.40	15.00	
	14	12.40	17.40	
	16		19.80	
	18		22.40	
	20		25.00	28.75
	22		27.70	31.85
	24		30.60	35.20
	26		33.55	38.60
	28		36.65	42.15
	30		40.95	47.10
21	3	4.70	6.15	
	4	5.25	7.00	
	5	5.85	8.00	
	6	6.55	9.10	
	7	7.25	10.20	
	8	7.95	11 30	
	9	8.65	12.45	
	10	9.40	13 65	
	11	10.20	15.85	
	12	11.05	16.00	
	14	13.20	18.55	
	16		21.10	
	18		23.90	
	20		26.65	30.65
	22		29.60	34.05
	24		32.70	37.60
	26		35.80	41.15
	28		39.10	44.95
	30		42.65	49.05

See additional prices for Tight and Loose, Split and Clamp Hub Pulleys on pages 29, 30, 31 and 32.

MACHINE MOULDED PULLEYS.

Bored, Turned and Balanced, with Set Screws or Key Seats.

Diameter in Inches.	Face in Inches.	Single Belt.	Double Belt.	D'ble Arm. D'ble Belt.	Diameter in Inches.	Face in Inches.	Single Belt.	Double Belt.	D'ble Arm. D'ble Belt.
22	3	$ 4.90	$ 6.45		**24**	7	$ 8.45	$12.00	
	4	5.55	7.40			8	9.30	13.40	
	5	6.15	8.45			9	10.20	14.80	
	6	6.90	9.60			10	11.10	16.20	
	7	7.65	10.80			11	12.10	17.65	
	8	8.40	12.00			12	13.15	19.00	
	9	9.15	13.20			14	15.70	22.00	
	10	9.95	14.50			16		25.10	
	11	10.80	15.75			18		28.40	
	12	11.70	17.00			20		31.70	$36.45
	14	14.05	19.70			22		35.40	40.70
	16		22.40			24		39.00	44.95
	18		25.40			26		43.70	49.10
	20		28.30	$32.55		28		46.60	53.60
	22		31.50	36.25		30		50.70	58.35
	24		34.80	40.00					
	26		38.10	43.85	**25**	3	5.70	7.40	
	28		41.60	47.85		4	6.50	8.65	
	30		45.20	52.00		5	7.25	9.90	
						6	8.10	11.25	
23	3	5.15	6.70			7	8.95	12.70	
	4	5.80	7.75			8	9.90	14.15	
	5	6.50	8 90			9	10.85	15.60	
	6	7.25	10.10			10	11.85	17.10	
	7	8.05	11.40			11	12.90	18.60	
	8	8.85	12.70			12	14.05	20.05	
	9	9.65	14.00			14	16.65	23.25	
	10	10.50	15.35			16		26 60	
	11	11.45	16.65			18		30.10	
	12	12 40	18.00			20		33.60	38.65
	14	14.85	20.85			22		37.45	43.05
	16		23.75			24		41.20	47.40
	18		26.90			26		45.05	51.80
	20		29.95	34.45		28		49.10	56.95
	22		33.45	38.45		30		53.25	61.10
	24		36.90	42.45					
	26		40.40	46 45	**26**	3	6.00	7.80	
	28		44.10	50.70		4	6.90	9.15	
	30		48.00	55.20		5	7.65	10.45	
						6	8.60	11.90	
24	3	5.40	7.00			7	9.45	13.40	
	4	6.10	8.15			8	10 55	14.90	
	5	6.85	9.35			9	11.50	16.40	
	6	7.65	10.65			10	12.60	18 00	

See additional prices for Tight and Loose, Split and Clamp Hub Pulleys on pages 29, 30. 31 and 32.

MACHINE MOULDED PULLEYS.

Bored, Turned and Balanced, with Set Screws or Key Seats.

Diameter in Inches.	Face in Inches.	Single Belt.	Double Belt.	D'ble Arm. D'ble Belt.
26	11	$13.75	$19.60	
	12	15.00	21.10	
	14	17.65	24.55	
	16		28.10	
	18		31.80	
	20		35.55	$40.85
	22		39.75	45.70
	24		43.45	50.00
	26		47.40	54.50
	28		51.55	59.25
	30		55 80	63.85
27	3	6.35	8.25	
	4	7.30	9.60	
	5	8.15	11.00	
	6	9.05	12.50	
	7	10.00	14.10	
	8	11 10	15.65	
	9	12 20	17.25	
	10	13.35	18.90	
	11	14.60	20.60	
	12	15.90	22.20	
	14	18.60	25.80	
	16		29.60	
	18		35.55	
	20		37.50	43.10
	22		41.70	47.95
	24		45.70	52.55
	26		50.75	58.35
	28		54.00	62.10
	30		58.40	67.20
28	3	6.75	8 70	
	4	7.70	10.10	
	5	8.50	11.55	
	6	9.50	13.15	
	7	10.60	14.80	
	8	11.70	16 40	
	9	12.90	18.05	
	10	13.10	19.80	
	11	15.45	21.60	
	12	16.85	23.30	
	14	19.55	27.10	
	16		31.10	

Diameter in Inches.	Face in Inches.	Single Belt.	Double Belt.	D'ble Arm. D'ble Belt.
28	18		$35.25	
	20		39.45	$45.35
	22		43.75	50.30
	24		47.90	55.10
	26		52.15	60.00
	28		56.50	65.00
	30		60.90	70.05
29	3	$ 7.25	9.15	
	4	8.10	10.60	
	5	9.00	12.15	
	6	10.00	13.85	
	7	11.15	15.50	
	8	12.35	17.15	
	9	13.60	18.85	
	10	14.90	20.70	
	11	16 30	22.60	
	12	17.70	24.40	
	14	20.55	28.40	
	16		32.60	
	18		37.00	
	20		41.40	47.60
	22		45.80	52.65
	24		50.15	57.70
	26		54 00	62.80
	28		59.00	67.85
	30		63 45	73.00
30	3	7.60	9.60	
	4	8.55	11.10	
	5	9.45	12.70	
	6	10.55	14.55	
	7	11.75	16.20	
	8	13.00	18.00	
	9	14.30	19.80	
	10	15.75	21 60	
	11	17.15	23.50	
	12	18.60	25.50	
	14	21.55	29.70	
	16		34.20	
	18		38 70	
	20		43 25	49.75
	22		47.80	54.95
	24		52.40	60.25

See additional prices for Tight and Loose, Split and Clamp Hub Pulleys on pages 29, 30, 31 and 32.

MACHINE MOULDED PULLEYS.

Bored, Turned and Balanced, with Set Screws or Key Seats.

Diameter in Inches.	Face in Inches.	Single Belt.	Double Belt.	D'ble Arm. D'ble Belt.	Diameter in Inches.	Face in Inches.	Single Belt.	Double Belt.	D'ble Arm. D'ble Belt.
30	26		$56.95	$65.45	**33**	3	$ 8.90	$11.00	
	28		61.50	70.70		4	9.90	12.80	
	30		66.10	76.00		5	11.00	14.80	
						6	12.25	16.80	
31	3	$ 8.05	10.00			7	13.60	18.80	
	4	8 95	11.65			8	15.05	20.80	
	5	9.95	13.40			9	16.70	22.85	
	6	11.10	15.30			10	18.25	24.95	
	7	12.35	17.10			11	19.90	27.10	
	8	13.70	19.00			12	21.50	29.25	
	9	15.10	21.50			14	24.80	34.10	
	10	16.55	22.70			16		39.05	
	11	18.05	24 70			18		44.10	
	12	19.55	26.75			20		49.55	$ 56.95
	14	22.60	31.15			22		54.10	62.30
	16		35.80			24		59.05	67.90
	18		40.50			26		64.10	73.70
	20		45 35	52.15		28		69.20	79.60
	22		49.90	57.40		30		73.80	84.85
	24		54.60	62.80	**34**	3	9.40	11.60	
	26		59.30	68.20		4	10.40	13.50	
	28		64.05	73 65		5	11.50	15.50	
	30		68.00	78.20		6	12.90	17 60	
						7	14.35	19.70	
32	3	8.45	10.45			8	15.85	21.75	
	4	9.40	12.20			9	17.55	23.85	
	5	10.45	14.10			10	19.10	26.10	
	6	11.65	16.05			11	20.85	28.30	
	7	12.95	17.90			12	22.50	30.50	
	8	14.40	19.85			14	25.90	35.60	
	9	15.90	22.20			16		40.70	
	10	17.40	23.85			18		45.90	
	11	19.00	25.90			20		51.65	59.40
	12	20.55	28.00			22		56.20	64.60
	14	23.70	32.65			24		61.30	70.50
	16		37.45			26		66.50	76.45
	18		42.30			28		71.80	82.55
	20		47.45	54.50		30		76.70	88.20
	22		52.00	59.80					
	24		56.85	65.35	**35**	3	9.90	12.30	
	26		61.70	70.90		4	10.90	14.10	
	28		66.65	76.65		5	12.10	16.20	
	30		70 90	81.55		6	13.50	18.40	

See additional prices for Tight and Loose, Split and Clamp Hub Pulleys on pages 29, 30, 31 and 32.

MACHINE MOULDED PULLEYS.

Bored, Turned and Balanced, with Set Screws or Key Seats.

Diameter in Inches.	Face in Inches.	Single Belt.	Double Belt.	D'ble Arm. D'ble Belt.
35	7	$15.00	$20.60	
	8	16 60	22.75	
	9	18.25	24.90	
	10	19.95	27.20	
	11	21.75	29.50	
	12	23 50	31.80	
	14	27.00	37.05	
	16		42.35	
	18		47.70	
	20		53.75	$61.80
	22		58.30	66.95
	24		63.65	73.20
	26		68.90	79.25
	28		74.40	85.55
	30		79.60	91.55
36	3	10.40	12.75	
	4	11.40	14.75	
	5	12.65	16.95	
	6	14.10	19 20	
	7	15.70	21.45	
	8	17.35	23.70	
	9	19 10	26 00	
	10	20.85	28.30	
	11	22.70	30.70	
	12	24 50	33.10	
	14	28.10	38.55	
	16		44.00	
	18		49 50	
	20		55.90	64.30
	22		60.40	69.45
	24		65.80	75.70
	26		71.30	82.00
	28		76.90	88.45
	30		82.55	94.95
38	4	12.55	16.25	
	5	13.95	17 15	
	6	15.60	21.05	
	7	17.95	23.45	
	8	19.05	25.90	
	9	20.90	28.35	
	10	22.80	30.80	
	11	24.75	33.35	

Diameter in Inches.	Face in Inches.	Single Belt.	Double Belt.	D'ble Arm. D'ble Belt.
38	12	$26.65	$35.95	
	14	30.50	41.65	
	16		49.15	
	18		53.50	
	20		59.80	$ 68.75
	22		65.05	74.80
	24		70.85	81.45
	26		76.75	88.25
	28		82.75	95.15
	30		88.75	102.05
	32		94.80	109.00
	34		100.85	115.95
	36		106 95	123.00
	38		113.10	130.05
	40		119.20	137.10
40	4	13.70	17.75	
	5	15.30	19 60	
	6	17.10	22.90	
	7	18.90	25.45	
	8	20.80	28.10	
	9	22.75	30.70	
	10	24.75	33.30	
	11	26.80	36.05	
	12	28.80	38.75	
	14	32.90	44.80	
	16	37.10	52.65	
	18		57.50	
	20		63.70	73.25
	22		69.70	80.15
	24		75 90	87.30
	26		82.20	94.55
	28		88.60	101.90
	30		94.95	109.10
	32		101.40	116.60
	34		107.80	124.00
	36		114.20	131.35
	38		120.70	138.80
	40		127.15	146.20
42	4	14.90	19.30	
	5	16.70	22.05	
	6	18.60	24.80	
	7	20.55	27 55	

See additional prices for Tight and Loose, Split and Clamp Hub Pulleys on pages 29, 30, 31 and 32.

MACHINE MOULDED PULLEYS.

Bored, Turned and Balanced, with Set Screws or Key Seats.

Diameter in Inches.	Face in Inches.	Single Belt.	Double Belt.	D'ble Arm. D'ble Belt.
42	8	$22.55	$ 30.30	
	9	24.60	33.05	
	10	26.70	35.85	
	11	28.85	38.75	
	12	31.00	41.60	
	14	35.30	47.95	
	16	39.70	54.40	
	18	44 20	61.00	
	20	49.00	67.60	$ 77.75
	22	54.00	74.30	85.45
	24	59.00	81.00	93.15
	26		87.70	100.85
	28		94.45	108.60
	30		101.20	116.40
	32		108.00	124.20
	34		114.75	131.95
	36		121.50	139.70
	38		128.25	147.50
	40		135.00	155.30
44	4	16.25	21.00	
	5	18.20	23.90	
	6	20.25	26.85	
	7	22 30	29.75	
	8	24.45	32.70	
	9	26.60	35.65	
	10	28.80	38.65	
	11	31.10	41.80	
	12	33.40	44.90	
	14	37.90	51.60	
	16	42.70	58.50	
	18	47.55	65.50	
	20	52.60	72 50	83.45
	22	58.00	79.50	91.40
	24	63.30	86.65	99.65
	26		93.80	107.85
	28		100.95	115.10
	30		108.20	124.45
	32		115.50	132.80
	34		122.70	141.10
	36		129.90	149.40
	38		137.20	157.80
	40		144.50	166.15

Diameter in Inches.	Face in Inches.	Single Belt.	Double Belt.	D'ble Arm. D'ble Belt.
46	4	$17.65	$ 22.75	
	5	19.70	25.80	
	6	21.85	28.90	
	7	24.05	32.00	
	8	26.35	35.15	
	9	28.60	38.35	
	10	30.95	41.55	
	11	33.40	44.90	
	12	35.80	48.20	
	14	40.60	55.30	
	16	45.70	62.60	
	18	50.90	70.00	
	20	56.30	77.40	$ 89.00
	22	62.00	84.80	97.50
	24	67.60	92 30	106.15
	26		99.90	114.90
	28		107.55	123.70
	30		115.20	132.50
	32		123.00	141.45
	34		130.70	150.30
	36		138.40	159.15
	38		146.20	168.10
	40		154.00	177.00
48	4	19.00	24.50	
	5	21.20	27.70	
	6	23.50	31.00	
	7	25.85	34.30	
	8	28.25	37 65	
	9	30.65	41.05	
	10	33.15	44.45	
	11	35.70	48.00	
	12	38.20	51.50	
	14	43.30	59.00	
	16	48.70	66.70	
	18	54 20	74.50	
	20	60.00	82.30	94.65
	22	66.00	90.10	103.60
	24	72.00	98.00	112.70
	26		106.00	121.90
	28		114.15	131.25
	30		122.30	140.65
	32		130.50	150.05

See additional prices for Tight and Loose, Split and Clamp Hub Pulleys on pages 29, 30, 31 and 32.

MACHINE MOULDED PULLEYS.

Bored, Turned and Balanced, with Set Screws or Key Seats.

Diameter in Inches.	Face in Inches.	Single Belt.	Double Belt.	D'ble Arm. D'ble Belt.
48	34		$188.70	$159.50
	36		146.90	168.95
	38		155 10	178.35
	40		163.30	187.80
50	5	$22.80	29.75	
	6	25.30	33.30	
	7	27.75	36.80	
	8	30.25	40.30	
	9	32.80	43 85	
	10	35.45	47.45	
	11	38.10	51.15	
	12	40.80	54.80	
	14	46.20	62.70	
	16	52.00	70.85	
	18	57.95	79.15	
	20	64.00	87.40	100.50
	22	70.40	95.70	110.50
	24	76.85	104.10	119.70
	26		112.60	129.50
	28		121.25	139.45
	30		129.90	149.40
	32		138.60	158.80
	34		147.40	169.50
	36		156.10	179.50
	38		164.90	189.65
	40		173.80	199 85
52	5	24.50	31.85	
	6	27.10	35.65	
	7	29.65	39 30	
	8	32 30	43.00	
	9	35.00	46.75	
	10	37.75	50.50	
	11	40.50	54.35	
	12	43 40	58.15	
	14	49.20	66.45	
	16	55.30	75.05	
	18	61.75	83.80	
	20	68.10	92.50	106 40
	22	74.80	101.30	116.50
	24	81.70	110.30	126.85
	26		119.30	137.20
	28		128.40	147.65

Diameter in Inches.	Face in Inches.	Single Belt.	Double Belt.	D'ble Arm D'ble Belt.
52	30		$137.65	$158.20
	32		146.80	168.80
	34		156.10	179.50
	36		165 30	190.10
	38		174.70	200.90
	40		184.10	211.70
54	5	$26.20	33.95	
	6	28.90	37 90	
	7	31.65	41.80	
	8	34.40	45.70	
	9	37.20	49.65	
	10	40.05	53.60	
	11	43 00	57.55	
	12	46.00	61.50	
	14	52.20	70.25	
	16	58.70	79.25	
	18	65.50	88.50	
	20	72.20	97.70	112.35
	22	79.30	107.00	123.05
	24	86.50	116.50	133.95
	26		126.00	144.90
	28		135.60	155.95
	30		145.30	167.10
	32		155.00	178.25
	34		167.00	189.40
	36		174.50	200.65
	38		184.30	212.95
	40		194.20	223.35
56	6	30.85	40.65	
	7	33.55	44.50	
	8	36.30	48.50	
	9	39.25	52.55	
	10	42.25	56.60	
	11	45.45	60.75	
	12	48.75	65.00	
	14	55.40	74.35	
	16	62.30	83.55	
	18	69.50	93.50	
	20	76.60	103.25	119.75
	22	84.15	113.10	130.05
	24	91.80	123.15	141.60
	26		133.20	153.20

See additional prices for Tight and Loose, Split and Clamp Hub Pulleys on pages 29, 30, 31 and 32.

MACHINE MOULDED PULLEYS.

Bored, Turned and Balanced, with Set Screws or Key Seats.

Diameter in Inches.	Face in Inches.	Single Belt.	Double Belt.	D'ble Arm. D'ble Belt.	Diameter in Inches.	Face in Inches.	Single Belt.	Double Belt.	D'ble Arm. D'ble Belt.
56	28		$143.20	$164.70	**60**	28		$158.80	$182.60
	30		153 50	176.50		30		169.90	195.40
	32		163.70	188.25		32		181 00	208.15
	34		173.80	199.85		34		192.10	220.90
	36		184.00	211.60		36		203.20	233.60
	38		194.30	233 45		38		214 30	246.55
	40		204.60	235.30		40		225.40	259.20
58	6	$32.80	43.25		**62**	6	$36.70	48.30	
	7	35.50	47.20			7	39.79	52.65	
	8	38.35	51.30			8	42.85	57.10	
	9	41.35	55.45			9	45.85	61.65	
	10	44.55	59.65			10	49.75	66.30	
	11	47.95	64.00			11	53 55	71.10	
	12	51.50	68.50			12	57.40	76.00	
	14	58 60	78.45			14	65.40	86.95	
	16	65.90	87.85			16	73.50	97.25	
	18	73.50	98.50			18	81.60	108.70	
	20	81.00	108.85	125.20		20	90.30	120.35	138.40
	22	89.05	119.25	137.15		22	99.05	131.85	150 60
	24	97.15	129.80	149.25		24	108.00	143 20	164.70
	26		140.40	161.45		26		155.15	178.40
	28		150.90	173.55		28		166.85	191.85
	30		161.70	185.95		30		178.50	205.30
	32		172.40	198.25		32		190.00	218.50
	34		182.90	210.35		34		201.80	232.00
	36		193.50	222.50		36		213.50	245.50
	38		204.30	234.95		38		225.10	258.55
	40		215.00	247.25		40		236.80	272.30
60	6	34.80	46.00		**64**	6	38.60	50.60	
	7	37.50	50.00			7	41.90	55.35	
	8	40.35	54.10			8	45.35	60.10	
	9	43.45	58.35			9	48.30	64.95	
	10	46.85	62.75			10	52.75	69.90	
	11	50.45	67.30			11	56.65	74.90	
	12	54.20	72.00			12	60.70	80.00	
	14	61.80	82.55			14	69.10	91.35	
	16	69.60	92.15			16	77.50	102.35	
	18	77.50	103.50			18	85.80	113.85	
	20	85.50	114.45	131.60		20	95.10	126.25	145.20
	22	93.95	125.45	144.25		22	104.25	138.30	159.05
	24	102.50	136.50	157.00		24	113.50	150.90	173.55
	26		147 65	169.80		26		162 65	187.05

See additional prices for Tight and Loose, Split and Clamp Hub Pulleys on pages 29, 30, 31 and 32.

MACHINE MOULDED PULLEYS.

Bored, Turned and Balanced, with Set Screws or Key Seats.

Diameter in Inches.	Face in Inches.	Single Belt.	Double Belt.	D'ble Arm. D'ble Belt.
64	28		$174 90	$201.15
	30		187.10	215.20
	32		199.00	228.55
	34		211.50	243.25
	36		223.80	257.35
	38		235.95	271.30
	40		248.25	285.30
66	6	$40.50	53.00	
	7	44.20	58.05	
	8	47.95	63.15	
	9	51.80	68.30	
	10	55.75	73.50	
	11	59.80	78.75	
	12	64.00	84.00	
	14	72.70	95.75	
	16	81.50	107.55	
	18	90.50	119.50	
	20	99.95	132.15	152.05
	22	109.45	144.80	166.50
	24	119.00	157.50	181.10
	26		170.20	195.70
	28		182.95	210 40
	30		195.70	225 05
	32		208.50	239.80
	34		221 30	254.50
	36		234.10	269.20
	38		246.90	283.95
	40		259.70	298.65
68	6	42.80	55.70	
	7	46.70	60.95	
	8	50.60	66.25	
	9	54.60	71.60	
	10	58.70	77.10	
	11	62.90	82.55	
	12	67.30	88.20	
	14	76.30	100.25	
	16	85.50	112.55	
	18	95.00	125.10	
	20	105.15	138.35	159.10
	22	115.10	151.50	174.25
	24	124.90	165.00	189.75
	26		178.05	204.75

Diameter in Inches.	Face in Inches.	Single Belt.	Double Belt.	D'ble Arm. D'ble Belt.
68	28		$191.35	$220.05
	30		204.60	235.30
	32		218.00	250.70
	34		231.30	266 00
	36		244.60	281.30
	38		258.00	296.70
	40		271.30	312.00
70	6	$45.10	58.40	
	7	49.20	63.85	
	8	53.30	69.25	
	9	57.40	75.00	
	10	61.70	80.70	
	11	66.05	86.40	
	12	70.60	92.40	
	14	80.05	104.85	
	16	89.60	117.65	
	18	99 50	130.80	
	20	110 40	144.55	166.25
	22	120.80	158.25	182.00
	24	130.70	172.50	198.40
	26		185.95	213.85
	28		199.75	239.70
	30		213.60	245.65
	32		227.50	261.60
	34		241.30	277.50
	36		255.15	293.40
	38		269.10	309.45
	40		282.90	325.35
72	6	47.50	61.00	
	7	51.75	66.75	
	8	56.00	72.55	
	9	60.30	78.40	
	10	64.70	84.30	
	11	69.25	90.30	
	12	74.00	96.50	
	14	83.75	109.45	
	16	93.70	122.75	
	18	104.00	136.50	
	20	115.70	150.60	173.20
	22	126.50	165.00	189.75
	24	136.50	179 50	207.40
	26		193.85	222.90

See additional prices for Tight and Loose, Split and Clamp Hub Pulleys on pages 29, 30, 31 and 32.

MACHINE MOULDED PULLEYS.

Bored, Turned and Balanced, with Set Screws or Key Seats.

Diameter in Inches.	Face in Inches.	Single Belt.	Double Belt.	D'ble Arm. D'ble Belt.	Diameter in Inches.	Face in Inches.	Single Belt.	Double Belt.	D'ble Arm. D'ble Belt.
72	28		$208.20	$239.45	76	36		$287.20	$330.30
	30		222.60	256.00		38		302.60	348.00
	32		237.00	272.55		40		318.20	366.00
	34		251.40	289.10					
	36		265.80	305.65	78	8	$ 64.75	82.35	
	38		280.20	322.25		9	69.70	89.10	
	40		294.60	338.80		10	74.70	95.90	
74	8	$ 58.90	75.75			11	79.80	102.85	
	9	63.40	81.90			12	85.00	110.00	
	10	68.00	88.50			14	95.65	124.50	
	11	72.75	94.80			16	106.65	139.25	
	12	77.60	101.00			18	118 00	154.50	
	14	87.65	114.45			20	130.30	170.30	195.85
	16	98.00	128.25			22	142.65	186.10	214.00
	18	108.60	143.50			24	155.00	202.00	232.30
	20	120.50	157.10	180.65		26	167.45	217.95	250.65
	22	131.85	172.00	197.80		28	179.95	233.95	269.05
	24	143.00	187.00	215.05		30	192.45	249.95	287.45
	26	154.15	201.85	232.10		32	205.00	266.00	305.90
	28	165.75	216.75	249.25		34		282.00	324.30
	30	177.30	231.70	266 45		36		298.00	342.70
	32	189.00	246.60	283.60		38		314.00	361.10
	34		261.60	300.85		40		330.00	379.50
	36		276.50	317.95					
	38		291.40	335.10	80	8	67.65	85.95	
	40		306.40	352.30		9	72.80	92.90	
						10	78.00	99.85	
76	8	61.80	79.05			11	83.30	106.95	
	9	66.50	85.50			12	88.60	114.30	
	10	71.30	92.70			14	99.85	129.50	
	11	76.25	99.30			16	111.40	144.95	
	12	81.30	105.50			18	123 30	160.80	
	14	91.60	119.45			20	136.00	177.10	203.65
	16	102.30	133.75			22	148.75	193.40	222.40
	18	113.30	148.45			24	161.50	210.00	241.50
	20	125.40	163.70	188.25		26	174.25	226.25	260.20
	22	137.25	179.00	205.85		28	187.15	242.85	279.30
	24	149.50	194.50	223.70		30	200.05	259.35	298.25
	26	160.75	209.85	241.30		32	213.00	276.00	317.40
	28	172.85	225.35	259.15		34		292.50	336.35
	30	184.85	240.80	276.90		36		309.10	355.45
	32	197.00	256.30	294.75		38		325.70	374.55
	34		271.80	312.55		40		342.20	393.55

See additional prices for Tight and Loose, Split and Clamp Hub Pulleys on pages 29, 30, 31 and 32.

MACHINE MOULDED PULLEYS.

Bored, Turned and Balanced, with Set Screws or Key Seats.

Diameter in Inches.	Face in Inches.	Single Belt.	Double Belt.	D'ble Arm. D'ble Belt.
126	36		$591.40	$680.10
	38		621.80	715.10
	40		652.30	750.10
132	10		227.60	
	11		241.10	
	12		255.00	
	14		282.50	
	16		310.50	
	18		340.00	
	20		372.00	427.80
	22		404.00	464.60
	24		436.00	501.40
	26		468.00	538.20
	28		500.30	575.30
	30		532.50	612.50
	32		565.00	649.75
	34		597.50	687.10
	36		630.00	724.50
	38		662.50	761.90
	40		695.00	799.25
138	10		243.60	
	11		257.60	
	12		272.00	
	14		300.25	
	16		329.75	
	18		361.00	
	20		395.00	454.25
138	22		$429.00	$493.40
	24		463.00	533.50
	26		497.00	571.60
	28		531.20	610.90
	30		565.20	650.00
	32		599.50	689.40
	34		633.75	728.80
	36		668.00	768.20
	38		702.25	807.60
	40		736.50	847.00
144	10		259 50	
	11		274.10	
	12		289.00	
	14		318.00	
	16		349.00	
	18		382.00	
	20		418.00	480.70
	22		454.00	522.10
	24		490.00	563.50
	26		526.00	604.90
	28		562.00	646.30
	30		598.00	687.70
	32		634.00	729.10
	34		670.00	770.50
	36		706.00	811.90
	38		742.00	853.30
	40		778 00	894.70

See additional prices for Tight and Loose, Split and Clamp Hub Pulleys on pages 29, 30, 31 and 32.

MACHINE MOULDED PULLEYS.

Bored, Turned and Balanced, with Set Screws or Key Seats.

Diameter in Inches.	Face in Inches.	Single Belt.	Double Belt.	D'ble Arm. D'ble Belt.
72	28		$208.20	$239.45
	30		222.60	256.00
	32		237.00	272.55
	34		251.40	289.10
	36		265.80	305.65
	38		280.20	322.25
	40		294.60	338.80
74	8	$ 58.90	75.75	
	9	63.40	81.90	
	10	68.00	88.50	
	11	72.75	94.80	
	12	77.60	101.00	
	14	87.65	114.45	
	16	98.00	128.25	
	18	108.60	142.50	
	20	120.50	157.10	180.65
	22	131.85	172.00	197.80
	24	143.00	187.00	215.05
	26	154.15	201.85	232.10
	28	165.75	216.75	249.25
	30	177.30	231.70	266.45
	32	189.00	246.60	283.60
	34		261.60	300.85
	36		276.50	317.95
	38		291.40	335.10
	40		306.40	352.30
76	8	61.80	79.05	
	9	66.50	85.50	
	10	71.30	92.70	
	11	76.25	99.30	
	12	81.30	105.50	
	14	91.60	119.45	
	16	102.30	133.75	
	18	113.30	148.45	
	20	125.40	163.70	188.25
	22	137.25	179.00	205.85
	24	149.50	194.50	223.70
	26	160.75	209.85	241.30
	28	172.85	225.35	259.15
	30	184.85	240.80	276.90
	32	197.00	256.30	294.75
	34		271.80	312.55
76	36		$287.20	$330.30
	38		302.60	348.00
	40		318.20	366.00
78	8	$ 64.75	82.35	
	9	69.70	89.10	
	10	74.70	95.90	
	11	79.80	102.85	
	12	85.00	110.00	
	14	95.65	124.50	
	16	106.65	139.25	
	18	118 00	154.50	
	20	130.30	170.30	195.85
	22	142.65	186.10	214.00
	24	155.00	202.00	232.30
	26	167.45	217.95	250 65
	28	179.95	233.95	269.05
	30	192.45	249.95	287.45
	32	205.00	266.00	305.90
	34		282.00	324.30
	36		298.00	342.70
	38		314.00	361.10
	40		330.00	379.50
80	8	67.65	85.95	
	9	72.80	92.90	
	10	78.00	99.85	
	11	83.30	106.95	
	12	88.60	114.30	
	14	99.85	129.50	
	16	111.40	144.95	
	18	123 30	160.80	
	20	136.00	177.10	203.65
	22	148.75	193.40	222.40
	24	161.50	210.00	241.50
	26	174 25	226.25	260.20
	28	187.15	242.85	279.30
	30	200.05	259.35	298.25
	32	213.00	276.00	317.40
	34		292.50	336.35
	36		309.10	355.45
	38		325.70	374.55
	40		342.20	393.55

See additional prices for Tight and Loose, Split and Clamp Hub Pulleys on pages 29, 30, 31 and 32.

MACHINE MOULDED PULLEYS.

Bored, Turned and Balanced, with Set Screws or Key Seats.

Diameter in Inches.	Face in Inches.	Single Belt.	Double Belt.	D'ble Arm. D'ble Belt.	Diameter in Inches.	Face in Inches.	Single Belt.	Double Belt.	D'ble Arm. D'ble Belt.
126	36		$591.40	$680.10	**138**	22		$429.00	$493.40
	38		621.80	715.10		24		463.00	533.50
	40		652.30	750.10		26		497.00	571.60
						28		531.20	610.90
132	10		227.60			30		565.20	650.00
	11		241.10			32		599.50	689.40
	12		255.00			34		633.75	728.80
	14		282.50			36		668.00	768.20
	16		310.50			38		702.25	807.60
	18		340.00			40		736.50	847.00
	20		372.00	427.80					
	22		404.00	464.60	**144**	10		259 50	
	24		436.00	501.40		11		274.10	
	26		468.00	538.20		12		289.00	
	28		500.30	575.30		14		318.00	
	30		532.50	612.50		16		349.00	
	32		565.00	649.75		18		382.00	
	34		597.50	687.10		20		418.00	480.70
	36		630.00	724.50		22		454.00	522.10
	38		662.50	761.90		24		490.00	563.50
	40		695.00	799.25		26		526.00	604.90
						28		562.00	646.30
138	10		243.60			30		598.00	687.70
	11		257.60			32		634.00	729.10
	12		272.00			34		670.00	770.50
	14		300.25			36		706.00	811.90
	16		329.75			38		742.00	853.30
	18		361.00			40		778.00	894.70
	20		395.00	454.25					

See additional prices for Tight and Loose, Split and Clamp Hub Pulleys on pages 29, 30, 31 and 32.

ADDITIONAL PRICE

TO BE ADDED TO LIST PRICE FOR

FINISHED SPLIT PULLEYS.

Diameter in Inches.	Face in Inches.	Price.	Diameter in Inches.	Face in Inches.	Price.
8 to 10	2 to 3	$ 1.30	**37 to 47**	3 to 4	$ 6.50
	4 to 6	1.75		5 to 6	7.50
	7 to 10	2.15		7 to 10	9.90
	11 to 14	3.10		11 to 14	13.50
	15 to 20	4.00		15 to 20	18.00
				21 to 30	27.00
11 to 18	2 to 3	1.50		31 to 40	37.00
	4 to 6	2.20			
	7 to 10	2.85	**48 to 60**	5 to 6	10.00
	11 to 14	4.00		7 to 10	13.00
	15 to 20	5.25		11 to 14	18.00
				15 to 20	25.00
19 to 23	3 to 4	2.65		21 to 30	34.50
	5 to 6	3.40		31 to 40	48.00
	7 to 10	4.05			
	11 to 14	5.60	**61 to 84**	7 to 10	20.00
	15 to 20	7.30		11 to 14	26.00
	21 to 30	11.00		15 to 20	35.00
				21 to 30	48.00
24 to 30	3 to 4	3.60		31 to 40	64.00
	5 to 6	4.40			
	7 to 10	5.40	**85 to 120**	11 to 14	38.00
	11 to 14	7.25		15 to 20	53.50
	15 to 20	10.00		21 to 30	70.00
	21 to 30	14.00		31 to 40	90.00
31 to 36	3 to 4	4.50	**121 to 144**	11 to 14	52.00
	5 to 6	5.60		15 to 20	72.00
	7 to 10	6.75		21 to 30	96.00
	11 to 14	9.80		31 to 40	124.00
	15 to 20	13.00			
	21 to 30	19.00			

Above prices to be added to price list of Pulleys from pages 14 to 28, inclusive.

ADDITIONAL PRICE

. . . FOR . . .

CLAMP HUB PULLEYS.

TO BE ADDED TO REGULAR LIST PRICE.

Diameter in Inches.	Face in Inches.	Additional Price.	Diameter in Inches.	Face in Inches.	Additional Price.
6 to 10	Up to 3	$ 0.80	**31 to 36**	Up to 4	$ 2.70
	Above 3 to 6	1.05		Above 4 to 6	3.35
	" 6 to 10	1.30		" 6 to 10	4.05
	" 10 to 14	1.85		" 10 to 14	5.90
	" 14 to 20	2.40		" 14 to 20	7.80
11 to 18	Up to 3	.90		" 20 to 30	11.40
	Above 3 to 6	1.30	**37 to 47**	Up to 4	3.90
	" 6 to 10	1.70		Above 4 to 6	4.50
	" 10 to 14	2.40		" 6 to 10	5.95
	" 14 to 20	3.15		" 10 to 14	8.10
19 to 23	Up to 4	1.60		" 14 to 20	10.80
	Above 4 to 6	2.05		" 20 to 30	16.20
	" 6 to 10	2.45		" 30 to 40	22.20
	" 10 to 14	3.35	**48 to 60**	Up to 6	6.00
	" 14 to 20	4.40		Above 6 to 10	7.80
	" 20 to 30	6.60		" 10 to 14	10.80
24 to 30	Up to 4	2.15		" 14 to 20	15.00
	Above 4 to 6	2.65		" 20 to 30	20.70
	" 6 to 10	3.25		" 30 to 40	28.80
	" 10 to 14	4.35	**61 to 84**	Up to 10	12.00
	" 14 to 20	6.00		Above 10 to 14	15 60
	" 20 to 30	8.40		" 14 to 20	21.00
				" 20 to 30	28 80
				" 30 to 40	38.40

Above 84 inches special prices will be quoted on application.

Above prices to be added to price list of Pulleys from pages 14 to 28, inclusive.

ADDITIONAL PRICE

TO BE ADDED TO LIST PRICE FOR

FINISHED SPLIT PULLEYS.

Diameter in Inches.	Face in Inches.	Price.	Diameter in Inches.	Face in Inches.	Price.
8 to 10	2 to 3	$ 1.30	**37 to 47**	3 to 4	$ 6.50
	4 to 6	1.75		5 to 6	7.50
	7 to 10	2.15		7 to 10	9.90
	11 to 14	3.10		11 to 14	13.50
	15 to 20	4.00		15 to 20	18 00
				21 to 30	27.00
11 to 18	2 to 3	1.50		31 to 40	37.00
	4 to 6	2.20			
	7 to 10	2.85	**48 to 60**	5 to 6	10.00
	11 to 14	4.00		7 to 10	13.00
	15 to 20	5.25		11 to 14	18.00
				15 to 20	25.00
19 to 23	3 to 4	2.65		21 to 30	34.50
	5 to 6	3.40		31 to 40	48.00
	7 to 10	4.05			
	11 to 14	5.60	**61 to 84**	7 to 10	20.00
	15 to 20	7.30		11 to 14	26.00
	21 to 30	11.00		15 to 20	35.00
				21 to 30	48.00
24 to 30	3 to 4	3.60		31 to 40	64.00
	5 to 6	4.40			
	7 to 10	5.40	**85 to 120**	11 to 14	38.00
	11 to 14	7.25		15 to 20	53.50
	15 to 20	10.00		21 to 30	70.00
	21 to 30	14.00		31 to 40	90.00
31 to 36	3 to 4	4.50	**121 to 144**	11 to 14	52.00
	5 to 6	5.60		15 to 20	72.00
	7 to 10	6.75		21 to 30	96.00
	11 to 14	9.80		31 to 40	124.00
	15 to 20	13.00			
	21 to 30	19.00			

Above prices to be added to price list of Pulleys from pages 14 to 28, inclusive.

ADDITIONAL PRICE

. . . FOR . . .

CLAMP HUB PULLEYS.

TO BE ADDED TO REGULAR LIST PRICE.

Diameter in Inches.	Face in Inches.	Additional Price.	Diameter in Inches.	Face in Inches.	Additional Price.
6 to 10	Up to 3	$ 0.80	**31 to 36**	Up to 4	$ 2.70
	Above 3 to 6	1.05		Above 4 to 6	3.35
	" 6 to 10	1.30		" 6 to 10	4.05
	" 10 to 14	1.85		" 10 to 14	5.90
	" 14 to 20	2.40		" 14 to 20	7.80
				" 20 to 30	11.40
11 to 18	Up to 3	.90			
	Above 3 to 6	1.30	**37 to 47**	Up to 4	3.90
	" 6 to 10	1.70		Above 4 to 6	4.50
	" 10 to 14	2.40		" 6 to 10	5.95
	" 14 to 20	3.15		" 10 to 14	8.10
				" 14 to 20	10.80
19 to 23	Up to 4	1.60		" 20 to 30	16.20
	Above 4 to 6	2.05		" 30 to 40	22.20
	" 6 to 10	2.45			
	" 10 to 14	3.35	**48 to 60**	Up to 6	6.00
	" 14 to 20	4.40		Above 6 to 10	7.80
	" 20 to 30	6.60		" 10 to 14	10.80
				" 14 to 20	15.00
24 to 30	Up to 4	2.15		" 20 to 30	20.70
	Above 4 to 6	2.65		" 30 to 40	28.80
	" 6 to 10	3.25			
	" 10 to 14	4.35	**61 to 84**	Up to 10	12.00
	" 14 to 20	6.00		Above 10 to 14	15 60
	" 20 to 30	8.40		" 14 to 20	21.00
				" 20 to 30	28 80
				" 30 to 40	38.40

Above 84 inches special prices will be quoted on application.

Above prices to be added to price list of Pulleys from pages 14 to 28, inclusive.

PATENT COLD-ROLLED STEEL SHAFTING.

Made to Whitworth Standard Gauge, and accurately straightened.

Diam. Inches.	Weight Per Ft.	Price Per Lb.	Diam. Inches.	Weight Per Ft.	Price Per Lb.	Diam. Inches.	Weight Per Ft.	Price Per Lb.
5	67.45	6½	2 15/16	23.06	5	1 3/4	8.18	5
4 15/16	65.50	6½	2 7/8	22.09	5	1 11/16	7.61	5
4 7/8	60.88	6½	2 13/16	21.15	5	1 5/8	7.06	5
4 3/4	54.11	6	2 3/4	20.21	5	1 9/16	6.52	5
4 7/16	52.62	6	2 11/16	19.31	5	1 1/2	6.01	5
4 1/4	48.26	6	2 5/8	18.41	5	1 7/16	5.60	5
4	42.75	6	2 9/16	17.55	5	1 3/8	5.52	5
3 15/16	41.04	6	2 1/2	16.70	5	1 5/16	5.26	5½
3 7/8	39.40	6	2 7/16	15.89	5	1 1/4	5.05	5½
3 3/4	37.57	6	2 3/8	15.07	5	1 3/16	4.61	5½
3 11/16	36.40	6	2 5/16	14.35	5	1 1/8	4.17	5½
3 5/8	35.20	6	2 1/4	13.52	5	1 1/16	3.86	5½
3 1/2	32.73	5½	2 3/16	12.80	5	1 1/16	3.77	5½
3 7/16	31.58	5½	2 1/8	12.07	5	1 1/8	3.38	5½
3 5/8	30.43	5½	2 1/16	11.35	5	1 3/8	3.20	5½
3 1/4	28.22	5½	2	10.69	5	1 5/8	3.11	5½
3 3/16	27.16	5½	1 15/16	10.03	5	1 1/16	3.02	5½
3 1/8	26.09	5½	1 7/8	9.39	5	1	2.68	5½
3	24.05	5	1 13/16	8.78	5			

The above prices are for Shafts from 1 foot to 24 feet long, inclusive.

For Shafts 6 in. to 11¾ in. long, ½c. per lb. NET extra.

For Shafts 3 in. to 5¾ in. long, 1c. per lb. NET extra.

For Shafts shorter than 3 in., special prices will be quoted.

For Shafts over 24 ft. long and less than 30 ft., ½c. per lb. net extra.

" " 30 " " " 35 " 1c. " "

" " 35 " " " 40 " 1½c. " "

" " 40 " " " 45 " 2c. " "

" " 45 " " over, 2½c. " "

IRON ROPE SHEAVES.

Diameter in Inches.	No. of Grooves.	Price.	Diameter in Inches.	No. of Grooves.	Price.	Diameter in Inches.	No. of Grooves.	Price.
34	1	$21.10	**40**	1	$25.90	**46**	1	$31.40
	2	28.10		2	34.10		2	41.20
	3	35.20		3	42.50		3	51.00
	4	42.40		4	51.10		4	61.20
	5	49.80		5	59.90		5	71.60
	6	57.50		6	68.90		6	82.30
	7	65.30		7	78.20		7	93.20
	8	73.40		8	87.80		8	104.50
	9	80 70		9	97.70		9	116.20
	10	90.40		10	107.80		10	128.00
	11	99.10		11	118.20		11	140.30
	12	108.20		12	128.90		12	152.90
	13	117.60		13	140.50		13	166.10
	14	127.30		14	152.10		14	179.70
36	1	22.70	**42**	1	27.60	**48**	1	33.60
	2	29.90		2	36.20		2	43.80
	3	37.30		3	45.00		3	54.20
	4	45.00		4	54.20		4	64.80
	5	52.80		5	63.60		5	75.70
	6	60.80		6	73.10		6	87.00
	7	69.10		7	82.90		7	98.50
	8	77.60		8	93.10		8	110.40
	9	86.52		9	103.40		9	122.40
	10	95.50		10	114.20		10	135.00
	11	104.80		11	125.20		11	147.80
	12	114.40		12	136 60		12	161.00
	13	124.50		13	148.80		13	175.30
	14	135.10		14	161.30		14	180.40
38	1	24.20	**44**	1	29.50	**50**	1	35 80
	2	31.90		2	38.80		2	46.40
	3	39.80		3	48.10		3	57.50
	4	47.90		4	57.80		4	68.60
	5	56.20		5	67.80		5	80.20
	6	64.70		6	77.90		6	91.90
	7	73.40		7	88.30		7	104.00
	8	82.60		8	99.10		8	116.50
	9	90.60		9	110.20		9	129.40
	10	100.10		10	121.60		10	142.40
	11	109.92		11	133.20		11	155.90
	12	120.00		12	145.20		12	169.80
	13	130.70		13	147.80		13	175.20
	14	141.60		14	150.60		14	190.60

PATENT COLD-ROLLED STEEL SHAFTING.

Made to Whitworth Standard Gauge, and accurately straightened.

Diam. Inches.	Weight Per Ft.	Price Per Lb.	Diam. Inches.	Weight Per Ft.	Price Per Lb.	Diam. Inches.	Weight Per Ft.	Price Per Lb.
5	67.45	6½	2 15/16	23.06	5	1¾	8.18	5
4 15/16	65.50	6½	2⅞	22.09	5	1 11/16	7.61	5
4⅞	60.88	6½	2 13/16	21.15	5	1⅝	7.06	5
4¾	54.11	6	2¾	20.21	5	1 9/16	6.52	5
4 11/16	52.62	6	2 11/16	19.31	5	1½	6.01	5
4⅝	48.26	6	2⅝	18.41	5	1 7/16	5.60	5
4	42.75	6	2 9/16	17.55	5	1 3/8	5.52	5
3 15/16	41.04	6	2½	16.70	5	1 5/16	5.26	5½
3⅞	39.40	6	2 7/16	15.89	5	1¼	5.05	5½
3¾	37.57	6	2⅜	15.07	5	1 3/16	4.61	5½
3 11/16	36.40	6	2 5/16	14.35	5	1⅛	4.17	5½
3⅝	35.20	6	2¼	13.52	5	1 1/16	3.86	5½
3½	32.73	5½	2 3/16	12.80	5	1	3.77	5½
3 7/16	31.58	5½	2⅛	12.07	5	15/16	3.38	5½
3⅜	30.43	5½	2 1/16	11.35	5	⅞	3.20	5½
3¼	28.22	5½	2	10.69	5	13/16	3.11	5½
3 5/16	27.16	5½	1 15/16	10.03	5	1 1/16	3.02	5½
3⅛	26.09	5½	1⅞	9.39	5	1	2.68	5½
3	24.05	5	1 13/16	8.78	5			

The above prices are for Shafts from 1 foot to 24 feet long, inclusive.

For Shafts 6 in. to 11¾ in. long, ½c. per lb. NET extra.

For Shafts 3 in. to 5¾ in. long, 1c. per lb. NET extra.

For Shafts shorter than 3 in., special prices will be quoted.

For Shafts over 24 ft. long and less than 30 ft., ½c. per lb. net extra.

" " 30 " " " 35 " 1c. " "

" " 35 " " " 40 " 1½c. " "

" " 40 " " " 45 " 2c. " "

" " 45 " " over, 2½c. " "

IRON ROPE SHEAVES.

Diameter in Inches.	No. of Grooves.	Price.	Diameter in Inches.	No. of Grooves.	Price.	Diameter in Inches.	No. of Grooves.	Price.
34	1	$21.10	40	1	$25.90	46	1	$31.40
	2	28.10		2	34.10		2	41.20
	3	35.20		3	42.50		3	51.00
	4	42.40		4	51.10		4	61.20
	5	49.80		5	59.90		5	71.60
	6	57.50		6	68.90		6	82.30
	7	65.30		7	78.20		7	93.20
	8	73.40		8	87.80		8	104.50
	9	80.70		9	97.70		9	116.20
	10	90.40		10	107.80		10	128.00
	11	99.10		11	118.20		11	140.30
	12	108.20		12	128.90		12	152.90
	13	117.60		13	140.50		13	166.10
	14	127.30		14	152.10		14	179.70
36	1	22.70	42	1	27.60	48	1	33.60
	2	29.90		2	36.20		2	43.80
	3	37.30		3	45.00		3	54.20
	4	45.00		4	54.20		4	64.80
	5	52.80		5	63.60		5	75.70
	6	60.80		6	73.10		6	87.00
	7	69.10		7	82.90		7	98.50
	8	77.60		8	93.10		8	110.40
	9	86.52		9	103.40		9	122.40
	10	95.50		10	114.20		10	135.00
	11	104.80		11	125.20		11	147.80
	12	114.40		12	136 60		12	161.00
	13	124.50		13	148.80		13	175.30
	14	135.10		14	161.30		14	180.40
38	1	24.20	44	1	29.50	50	1	35 80
	2	31.90		2	38.80		2	46.40
	3	39.80		3	48.10		3	57.50
	4	47.90		4	57.80		4	68.60
	5	56.20		5	67.80		5	80.20
	6	64.70		6	77.90		6	91.90
	7	73.40		7	88.30		7	104.00
	8	82.60		8	99.10		8	116.50
	9	90.60		9	110.20		9	129.40
	10	100.10		10	121.60		10	142.40
	11	109.92		11	133.20		11	155.90
	12	120.00		12	145.20		12	169.80
	13	130.70		13	147.80		13	175.20
	14	141.60		14	150.60		14	190.60

IRON ROPE SHEAVES.

Diameter in Inches.	No. of Grooves.	Price.	Diameter in Inches.	No. of Grooves.	Price.	Diameter in Inches.	No. of Grooves.	Price.
52	1	$ 38.30	**58**	1	$ 46.80	**64**	1	$ 56.90
	2	49.60		2	59.90		2	71.90
	3	61.10		3	73.20		3	87.20
	4	72.80		4	86.90		4	103.00
	5	85.00		5	100.80		5	119.00
	6	97.30		6	115.20		6	135.50
	7	110.00		7	129.80		7	152.30
	8	123.10		8	145.00		8	169.60
	9	136.40		9	160.40		9	180.00
	10	150.20		10	176.30		10	205.40
	11	164.40		11	192.50		11	223.90
	12	178.80		12	209.20		12	243.00
	13	194.10		13	226.50		13	264.80
	14	209.80		14	244.90		14	286.20
54	1	40.90	**60**	1	50.20	**66**	1	60.50
	2	52.80		2	63.80		2	76.30
	3	64.90		3	77.90		3	92.40
	4	77.30		4	92.20		4	109.00
	5	90.00		5	106.80		5	125.90
	6	103.10		6	121.90		6	143.20
	7	116.40		7	137.30		7	160.80
	8	130.20		8	153.10		8	178.90
	9	144.20		9	169.30		9	197.50
	10	158.80		10	186.00		10	216.50
	11	173.50		11	202.90		11	235.90
	12	188.80		12	220.49		12	255.80
	13	204.90		13	238.50		13	276.20
	14	222.20		14	257.80		14	297.40
56	1	43.80	**62**	1	53.40	**68**	1	64.40
	2	56.30		2	67.80		2	81.00
	3	69.00		3	82.40		3	97.90
	4	82.10		4	97.40		4	115.10
	5	95.40		5	112.80		5	132.70
	6	109.10		6	128.60		6	150.80
	7	123.10		7	144.70		7	169.20
	8	137.50		8	161.30		8	188.30
	9	152.50		9	178.20		9	207.60
	10	167.40		10	195.60		10	227.40
	11	183.00		11	213.40		11	247.70
	12	198.90		12	231.60		12	268.40
	13	215.40		13	250.70		13	289.60
	14	232.50		14	270.40		14	312.20

IRON ROPE SHEAVES.

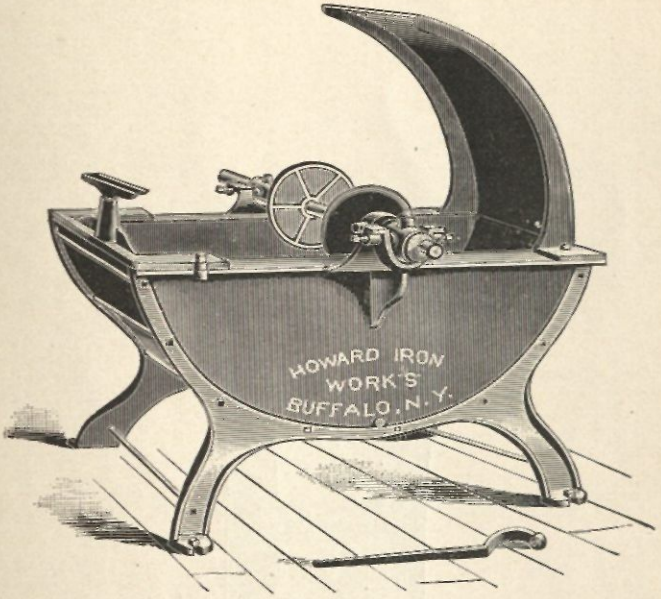
Diameter in Inches.	No. of Grooves.	Price.	Diameter in Inches.	No. of Grooves.	Price.	Diameter in Inches.	No. of Grooves.	Price.
106	1	$202.60	**108**	1	$211.40	**110**	1	$222.60
	2	240.20		2	242.60		2	266.30
	3	279.60		3	284.70		3	314.40
	4	319.90		4	327.90		4	364.20
	5	360.20		5	372.10		5	415.80
	6	402.80		6	420.40		6	470.20
	7	446.70		7	468.60		7	527.90
	8	491.20		8	518.90		8	586.30
	9	536.30		9	569.40		9	646.20
	10	580.50		10	621 80		10	707.50
	11	628.00		11	674.40		11	768.50
	12	672.10		12	729 80		12	830.70
	13	715.60		13	784.50		13	895.40
	14	765.80		14	837.10		14	960.10

IRON ROPE SHEAVES.

Diameter in Inches.	No. of Grooves.	Price.	Diameter in Inches.	No. of Grooves.	Price.	Diameter in Inches.	No. of Grooves.	Price.
52	1	$ 38.30	**58**	1	$ 46.80	**64**	1	$ 56.90
	2	49.60		2	59.90		2	71.90
	3	61.10		3	73.20		3	87.20
	4	72.80		4	86.90		4	103.00
	5	85.00		5	100.80		5	119.00
	6	97.30		6	115.20		6	135.50
	7	110.00		7	129.80		7	152.30
	8	123.10		8	145.00		8	169.60
	9	136.40		9	160.40		9	180.00
	10	150.20		10	176.30		10	205.40
	11	164.40		11	192.50		11	223.90
	12	178.80		12	209.20		12	243.00
	13	194.10		13	226.50		13	264.80
	14	209.80		14	244.90		14	286.20
54	1	40.90	**60**	1	50.20	**66**	1	60.50
	2	52.80		2	63.80		2	76.30
	3	64.90		3	77.90		3	92.40
	4	77.30		4	92.20		4	109.00
	5	90.00		5	106.80		5	125.90
	6	103.10		6	121.90		6	143.20
	7	116.40		7	137.30		7	160.80
	8	130.20		8	153.10		8	178.90
	9	144.20		9	169.30		9	197.50
	10	158.80		10	186.00		10	216.50
	11	173.50		11	202.90		11	235.90
	12	188.80		12	220.49		12	255.80
	13	204.90		13	238.50		13	276.20
	14	222.20		14	257.80		14	297.40
56	1	43.80	**62**	1	53.40	**68**	1	64.40
	2	56.30		2	67.80		2	81.00
	3	69.00		3	82.40		3	97.90
	4	82.10		4	97.40		4	115.10
	5	95.40		5	112.80		5	132.70
	6	109.10		6	128.60		6	150.80
	7	123.10		7	144.70		7	169.20
	8	137.50		8	161.30		8	188.30
	9	152.50		9	178.20		9	207.60
	10	167.40		10	195.60		10	227.40
	11	183.00		11	213.40		11	247.70
	12	198.90		12	231 60		12	268.40
	13	215.40		13	250.70		13	289.60
	14	232.50		14	270.40		14	312.20

IRON ROPE SHEAVES.

Diameter in Inches.	No. of Grooves.	Price.	Diameter in Inches.	No. of Grooves.	Price.	Diameter in Inches.	No. of Grooves.	Price.
106	1	$202.60	**108**	1	$211.40	**110**	1	$222.60
	2	240.20		2	242.60		2	266.30
	3	279.60		3	284.70		3	314.40
	4	319.90		4	327.90		4	364.20
	5	360.20		5	372.10		5	415.80
	6	402.80		6	420.40		6	470.20
	7	446.70		7	468.60		7	527.90
	8	491.20		8	518.90		8	586.30
	9	536.30		9	569.40		9	646.20
	10	580.50		10	621 80		10	707.50
	11	628.00		11	674.40		11	768 50
	12	672.10		12	729 80		12	830.70
	13	715.60		13	784.50		13	895.40
	14	765.80		14	837.10		14	960.10



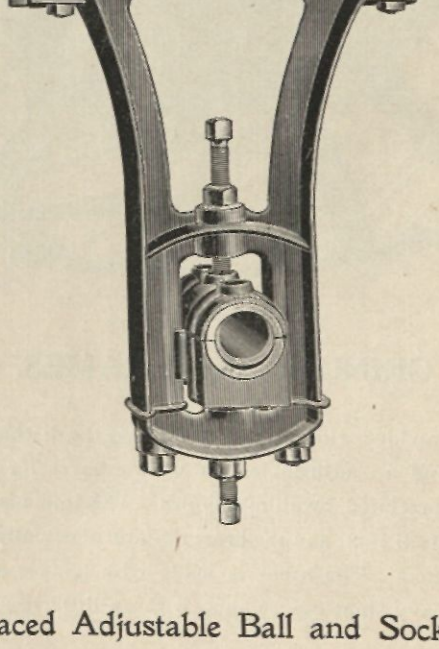
GRINDSTONE FRAMES.

This frame is provided with a shield to prevent the discharge of the water from the stone, and an adjustable rest with grooves for holding the tool, which will be appreciated by all mechanics The frame is water-tight, has the Universal Journal Box, and the bearings are effectually protected from the grit of the stone. The arbor is made with flanges and nuts, and so arranged that a heavy stone can be hung with as little trouble, and held as firmly as a saw.

PRICES, NOT INCLUDING STONE.

No. 4.	Takes a stone 4 inches face,				30	inches	diameter,	. . . .	$25.00
No. 5.	"	"	5	"	42	"	"	. . . .	35.00
No. 6.	"	"	8	"	54	"	"	. . . .	50.00

We furnish, on special order, frames to take stone up to 10-inch face.



Double Braced Adjustable Ball and Socket Hanger.

SELF-OILING.

Price List of Double Braced Ball and Socket Hangers Illustrated on Preceding Page.

Diameter of Shaft.	Length of Bearing.	Drop in Inches.												
		8	10	12	14	16	18	20	22	24	26	28	30	36
1 3-16	6¼	$2.75	$3.25	$3.75	$4.25	$4.75								
1 7-16	7	3.25	3.75	4.25	4.50	5 00	$5.25	$5.50	$5.75	$6.00				
1 11-16	7¾	4.00	4.50	4.75	5.00	5.25	5.50	5.75	6.00	6.50				
1 15-16	8½	5.25	5.75	6.00	6.25	6.50	6.75	7 25	7.75	8.25				
2 3-16	9¼	6 50	6.75	7.25	7.50	8.00	8.50	9 00	9.50	10.00	$10.50	$11.00	$11.50	
2 7-16	10½	8.00	8.50	8.75	9.00	9.50	10.25	11.00	11.75	12.50	13.00	13.50	14.00	$17.00
2 11-16	10¾	10.00	10.50	11.00	11.50	12.00	12.50	13.25	14.50	14.75	15.50	16.25	16 75	18.00
2 15-16	12¼		12.25	13.00	13.75	14.50	15.00	15.75	16.50	17.25	18.00	18.75	19.50	21.50
3 3-16	14½		14.50	15.00	15.75	16.50	17.25	18.25	19.00	19.75	20.50	21.75	22.00	24.50
3 7-16	14¾			21.25	22.25	23.00	23.75	24.75	25.75	27.00	28.00	29.00	30.00	32.25
3 11-16	16½			23.75	24.75	25.50	26.00	27.00	28.25	29.50	30.50	31.50	32.50	35.00
3 15-16	16¾			26.00	27.00	28.00	29.00	30.00	31.00	32.00	33.00	34.00	35.00	37.00
4 3-16	17½			29.50	30.75	31.75	32.75	33.75	34.75	35.75	36.75	37.75	39.75	41.50
4 7-16	18			33.25	34.25	35.00	35.75	36.75	37.75	38.75	40.00	41.50	43.00	45.50
4 15-16	19				39.90	40.50	42.25	44.25	46.25	48.25	51 00	53.50	56.25	62.25
5 7-16	19½				45.75	48.75	51.75	54.50	57.00	60.00	62.50	65.00	68 00	78.00
5 15-16	20					59 25	62.75	65.50	68.00	70.50	73.75	78 00	80.50	93.50

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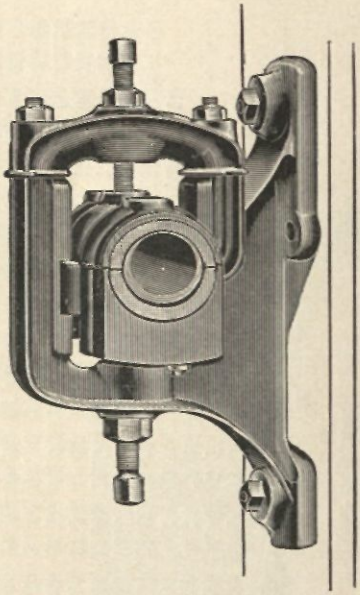
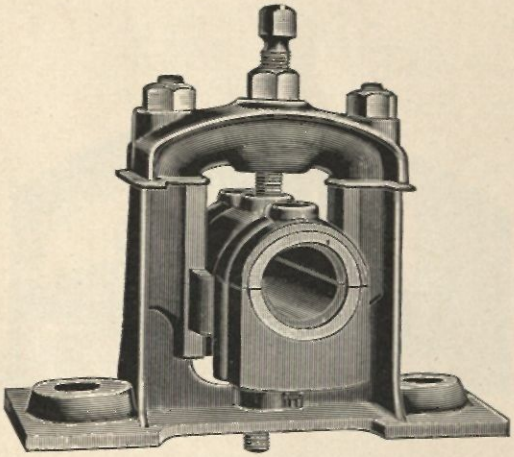


ADJUSTABLE BALL AND SOCKET POST HANGERS.

WITH SELF-OILING BABBITTED BEARINGS.

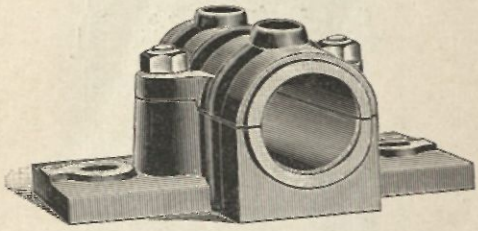
Diameter of Shaft in Inches.	Price.	Diameter of Shaft in Inches.	Price.
$1\frac{3}{16}$	$3.00	$3\frac{7}{16}$	$20.00
$1\frac{7}{16}$	4.00	$3\frac{15}{16}$	32.50
$1\frac{11}{16}$	4.50	$4\frac{7}{16}$	40.00
$1\frac{15}{16}$	5.25	$4\frac{15}{16}$	50.00
$2\frac{3}{16}$	6.50	$5\frac{7}{16}$	65.00
$2\frac{7}{16}$	8.50	$5\frac{15}{16}$	80.00
$2\frac{11}{16}$	11.25	$6\frac{7}{16}$	95.00
$2\frac{15}{16}$	12.75	$6\frac{15}{16}$	115.00
$3\frac{3}{16}$	15.50		



ADJUSTABLE BALL AND SOCKET PILLOW BLOCK.

SELF-OILING.

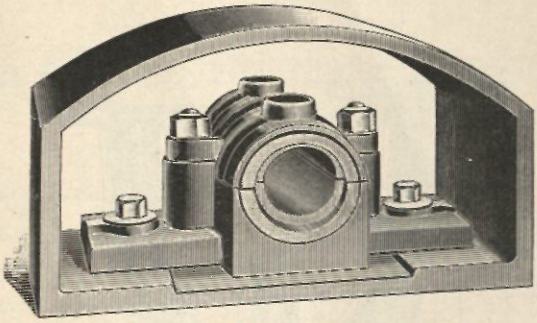
Diameter of Shaft in Inches.	Length of Bearing in Inches.	Price.
$1\frac{3}{16}$	$6\frac{1}{4}$	$3.45
$1\frac{7}{16}$	7	4.60
$1\frac{11}{16}$	$7\frac{3}{4}$	5.17
$1\frac{15}{16}$	$8\frac{1}{2}$	5.75
$2\frac{3}{16}$	$9\frac{1}{4}$	6.90
$2\frac{7}{16}$	$10\frac{1}{2}$	9.20
$2\frac{11}{16}$	$10\frac{1}{2}$	12.07
$2\frac{15}{16}$	$12\frac{1}{4}$	14.37
$3\frac{3}{16}$	$14\frac{3}{4}$	17.25
$3\frac{7}{16}$	$14\frac{3}{4}$	21.85
$3\frac{11}{16}$	$16\frac{1}{2}$	27.60
$3\frac{15}{16}$	$16\frac{1}{2}$	31.90
$4\frac{7}{16}$	18	39.60
$4\frac{15}{16}$	19	50.60
$5\frac{7}{16}$	$19\frac{1}{2}$	66.00
$5\frac{15}{16}$	20	82.50



BALL AND SOCKET PILLOW BLOCKS.

WITH SELF-OILING BABBITTED BEARINGS.

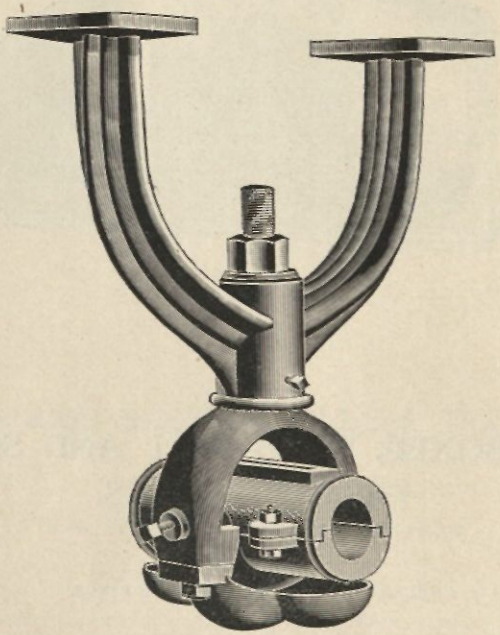
Diameter of Shaft in Inches.	Price.	Diameter of Shaft in Inches.	Price.
$1\frac{3}{16}$	$3.00	$3\frac{15}{16}$	$29.00
$1\frac{7}{16}$	4.00	$4\frac{7}{16}$	36.00
$1\frac{11}{16}$	4.50	$4\frac{15}{16}$	46.00
$1\frac{15}{16}$	5 00	$5\frac{7}{16}$	60.00
$2\frac{3}{16}$	6.00	$5\frac{15}{16}$	75.00
$2\frac{7}{16}$	8.00	$6\frac{7}{16}$	95.00
$2\frac{11}{16}$	10.50	$6\frac{15}{16}$	125.00
$2\frac{15}{16}$	12.50	$7\frac{7}{16}$	155.00
$3\frac{3}{16}$	15 00	$7\frac{15}{16}$	185.00
$3\frac{7}{16}$	19.00		



WALL BOXES, WITH BALL AND SOCKET PILLOW BLOCKS.

SELF-OILING, BABBITTED BEARINGS.

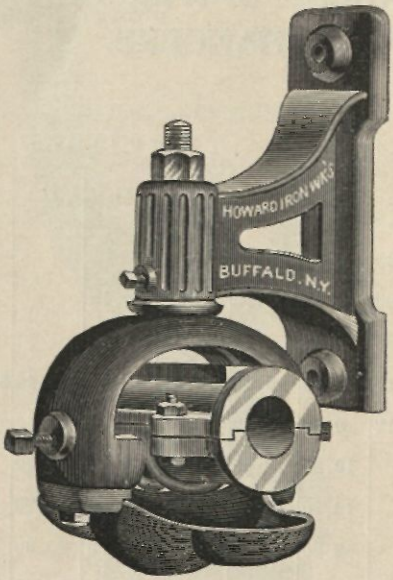
Diameter of Shaft in Inches.	Price.	Diameter of Shaft in Inches.	Price.
1 3/16	$5.50	3 15/16	$41.50
1 7/16	6.75	4 7/16	53.25
1 15/16	7.00	4 15/16	72.50
1 11/16	8.00	5 3/16	91.00
1 15/16	9.50	5 7/16	114.00
2 3/16	13.50	6 3/16	145.00
2 7/16	20.50	6 7/16	196.00
2 11/16	23.50	7 3/16	235.00
2 15/16	27.50	7 7/16	280.00
3 3/16	31.50		
3 7/16			



UNIVERSAL ADJUSTABLE HANGER.

DOUBLE BRACED UNIVERSAL ADJUSTABLE HANGERS.

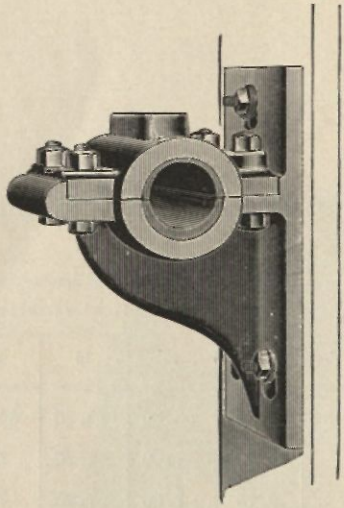
Diameter of Shaft.	Length of Bearing.	Drop in Inches.								
		13	16	18	21	24	27	30	33	36
$1\frac{7}{16}$	6	$5.20	$5.68	$6.16						
$1\frac{11}{16}$	8	7.20	7.68	8.16	$8.64	$9.12				
$1\frac{15}{16}$	8	7.20	7.68	8.16	8.64	9.12				
$2\frac{3}{16}$	10	9.12	9.60	10.40	10.92	10.96	$11.44	$12.00		
$2\frac{7}{16}$	10	9 12	9 60	10.40	10.92	10.96	11.44	12.00		
$2\frac{11}{16}$	12		12.80	13.60	14.80	16 00	17.20	18.40	$19.60	$20.80
$2\frac{15}{16}$	12		12.80	13.60	14.80	16.00	17.20	18.40	19.60	20.80
$3\frac{3}{16}$	14		19.20	20.80	22.40	24.00	25.60	27.20	28.80	30.40
$3\frac{7}{16}$	14		19.20	20 80	22.40	24.00	25.60	27.20	28.80	30.40
$3\frac{15}{16}$	16					32.00	34.40	36.80	39.20	41.60
$4\frac{7}{16}$	18					36.00	38.40	40.80	43.20	45.60
$4\frac{15}{16}$	20					40 00	42 40	44 80	47.20	49.60



UNIVERSAL ADJUSTABLE POST HANGER.

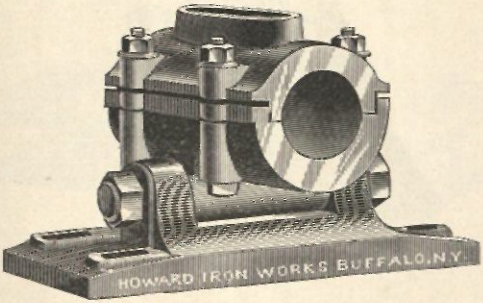
UNIVERSAL ADJUSTABLE POST HANGERS.

Diameter of Shaft in Inches.	Length of Box in Inches.	Distance from Post to Center of Shaft in Inches.					
		8	10	12	14	16	18
$1\frac{7}{16}$	6	$4.75	$5.00	$5.25	$5.50		
$1\frac{11}{16}$	8	6.75	7.00	7.25	7.50		
$1\frac{15}{16}$	8	6.75	7.00	7.25	7.50		
$2\frac{3}{16}$	10	8.75	9.00	9.25	9.50		
$2\frac{7}{16}$	10	8.75	9.00	9.25	9.50		
$2\frac{11}{16}$	12		11.30	11.80	12.30	$12.80	
$2\frac{15}{16}$	12		11.30	11.80	12.30	12.80	
$3\frac{3}{16}$	14		17.70	18.20	18.70	19.20	
$3\frac{7}{16}$	14		17.70	18.20	18.70	19.20	
$3\frac{15}{16}$	16			24.75	25.50	26.25	$ 27.00
$4\frac{7}{16}$	18			29.00	29.75	30.50	31.25
$4\frac{15}{16}$	20			34.00	34.75	35.50	36.25



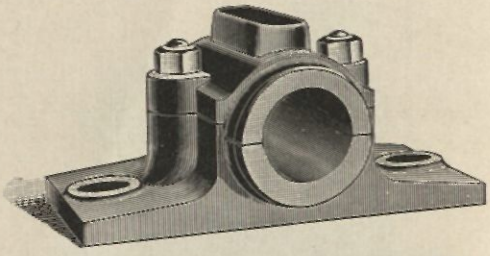
RIGID POST BRACKET BOX.

Diameter of Shaft in Inches.	Distance, Post to Center of Shaft in Inches.	Length of Bearing in Inches.	Price.
$1\frac{3}{16}$	$3\frac{1}{2}$	4	$2.75
$1\frac{7}{16}$	$3\frac{1}{2}$	4	3.25
$1\frac{11}{16}$	4	$4\frac{1}{2}$	3.75
$1\frac{15}{16}$	4	$6\frac{1}{2}$	4.50
$2\frac{3}{16}$	$4\frac{1}{4}$	$6\frac{3}{4}$	5.25
$2\frac{7}{16}$	$4\frac{1}{2}$	7	6.75
$2\frac{11}{16}$	5	$8\frac{1}{2}$	7.75
$2\frac{15}{16}$	5	$8\frac{1}{2}$	9.25
$3\frac{3}{16}$	5	9	11.00
$3\frac{7}{16}$	$5\frac{1}{4}$	9	13.25
$3\frac{11}{16}$	$6\frac{1}{2}$	10	15.50
$3\frac{15}{16}$	$6\frac{1}{2}$	10	18.00
$4\frac{3}{16}$	$6\frac{1}{2}$	12	21.00
$4\frac{7}{16}$	$6\frac{1}{2}$	12	24.25
$4\frac{11}{16}$	$7\frac{1}{2}$	$12\frac{1}{2}$	28.50
$4\frac{15}{16}$	$7\frac{1}{2}$	$12\frac{1}{2}$	33.00
$5\frac{7}{16}$	$8\frac{1}{2}$	14	42.00
$5\frac{15}{16}$	$8\frac{1}{2}$	15	51.00
$6\frac{7}{16}$	9	16	60.00



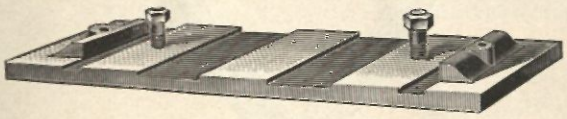
OSCILLATING PILLOW BLOCKS.

Diameter of Shaft in Inches.	Length of Box in Inches.	Height to Center of Shaft in Inches.	Price.	Price With Wall Frame.	Price With Base Plate.
1 3/16	6	3 5/8	$3.25	$7.45	$6.00
1 7/16	6	3 5/8	3.25	7.45	6.00
1 11/16	8	4 1/8	5.00	12.00	9.50
1 15/16	8	4 1/8	5.00	12.00	9.50
2 3/16	9	4 5/8	7.50	16.00	12.00
2 7/16	9	4 5/8	7.50	16 00	12.00
2 11/16	10	5 1/8	11.25	21.25	17.00
2 15/16	10	5 1/8	11.25	21.25	17.00
3 3/16	11	5 5/8	16.00	26.00	22.75
3 7/16	11	5 5/8	16.00	26.00	22.75
3 15/16	12	6 1/4	20.00	33.00	29.00
4 7/16	13	7	28.75	41.75	36.75
4 15/16	14	7 7/8	36.50	52.50	47.50
5 5/16	15	8 1/2	44.75	60.75	55.75
5 7/8	16	9 1/4	55.75	75.00	70.00



RIGID PILLOW BLOCKS.

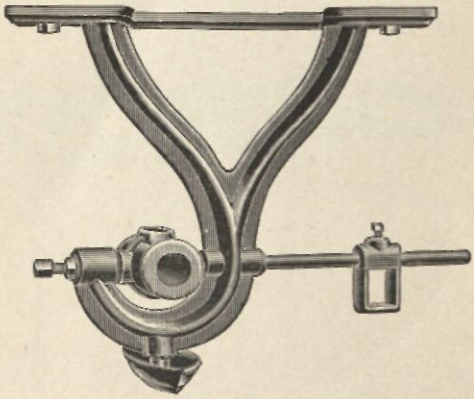
Diameter of Shaft in Inches.	Distance, Center of Bearing to Bottom of Base in Inches.	Length of Bearing in Inches.	Price.
1	1	2½	$2.00
1 1/16	1¼	4	2.50
1 1/8	1½	4	3.00
1 3/16	2	5	3.50
1 1/4	2	6	4.00
1 5/16	2⅛	6½	4.75
1 3/8	2½	6½	6.00
1 7/16	3	7½	7.00
1 1/2	3	7½	8.50
1 9/16	3½	8	10.00
1 5/8	3½	10	12.00
1 11/16	4	10	14.00
1 3/4	4	10	16.50
1 13/16	4½	10	19.50
1 7/8	4½	10	22.00
1 15/16	4¾	12	26.00
2	4¾	12	30.00
2 1/16	5¼	12	34.50
2 1/8	5¼	15	38.50
2 3/16	5¼	15	42.50
2 1/4	5¼	15	48.00
2 5/16	6	15	53.00
2 3/8	6	15	58.00



BASE PLATE FOR HEAVY PILLOW BLOCK.

Price list includes bolts for securing pillow blocks to base plates, but does not include foundation bolts.

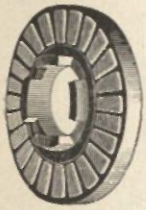
Diameter of Shaft in Inches.	Price of Base Plate.	Diameter of Shaft in Inches.	Price of Base Plate.
$1\frac{7}{16}$	$2.30	$3\frac{7}{16}$	$6.20
$1\frac{11}{16}$	2.60	$3\frac{15}{16}$	9.40
$1\frac{15}{16}$	2.60	$4\frac{7}{16}$	11.50
$2\frac{3}{16}$	3.50	$4\frac{15}{16}$	14.50
$2\frac{7}{16}$	3.50	$5\frac{7}{16}$	16.30
$2\frac{11}{16}$	5.00	$5\frac{15}{16}$	21.50
$2\frac{15}{16}$	5.00		



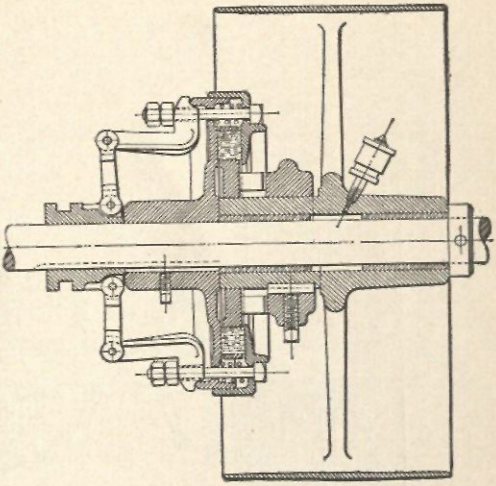
COUNTERSHAFT HANGER.

WITH ADJUSTABLE BELT SHIFTER, ARM AND OIL DISH.

Diameter of Shaft in Inches.	Length of Box in Inches.	Drop in Inches.		
		11	14	17
$1\frac{3}{16}$	5	$2.70	$2.90	$3.10
$1\frac{7}{16}$	6	3.15	3.35	3.55
$1\frac{11}{16}$	7	3.80	4.05	4.25
$1\frac{15}{16}$	8	4.50	4.75	5.00



FRICTION DISC.



SECTIONAL VIEW.

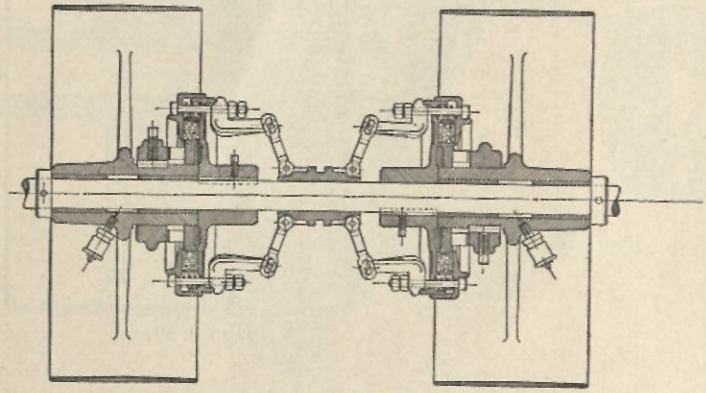
FRICTION CLUTCH PULLEY.

DESCRIPTION.

The friction Clutch Pulley is constructed as follows:

The pulley is made with a long hub to give sufficient wearing surface. The hub on one side is turned true to receive the Clutch. Upon the hub of the pulley is keyed a collar with Lugs on one side, which engage with Lugs on the Friction Disc; this causes the Disc, that fits loosely on the hub of pulley, to revolve with the pulley, and at the same time leaves the Disc free to vibrate sideways, if necessary. The advantage of the Disc being loosely connected with the pulley in this manner will be appreciated in case the pulley should become worn loose on the shaft, or in case the shaft or pulley or hub should not run true; this prevents the friction surface wearing when the Clutch is disengaged; it also prevents the part of the Clutch which is keyed to the shaft from working loose.

The Friction Disc is filled with hard wood, and presents two end grain wood surfaces, which come in contact with the two iron surfaces. The two iron surfaces are drawn in contact with the hard wood surfaces of the Disc by a very powerful mechanism, as shown in the cut. The Draw Bolts are provided with Jam Nuts, which can be easily adjusted to take up any wear that may occur. This Friction Clutch can be made in halves, applied to Wood Pulleys, Gearing, Sprocket Wheels, or to anything special that may be desired, as shown in the following cuts.



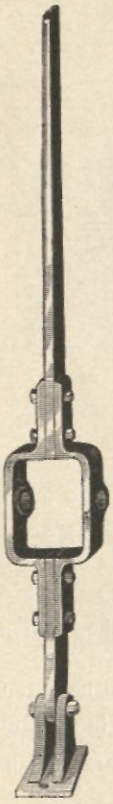
DUPLEX FRICTION CLUTCH PULLEYS.

DESCRIPTION.

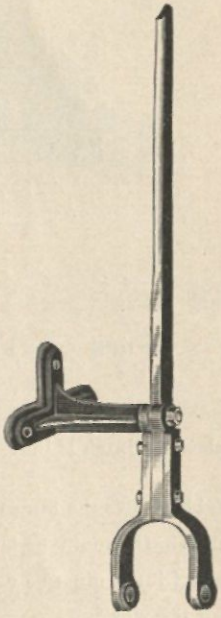
For Elevators, Hoisting Machinery, Counter-Shafts, and any kind of machinery requiring reverse motion.

Price of one pair of Duplex Clutch Pulleys, fitted to work together, is the same as for two Friction Clutch Pulleys of the same size.

CLUTCH LEVERS.



No. 2.

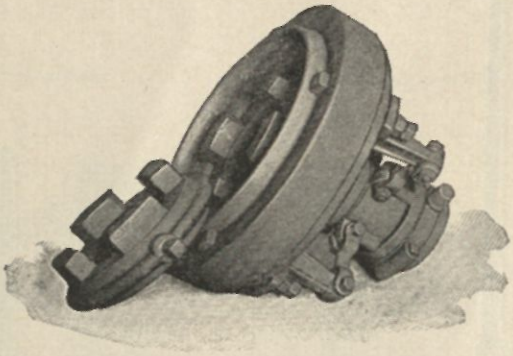


No. 3.

PRICES FURNISHED UPON APPLICATION.

Price List of Lever Straps and End Fulcrums.

Size.....	6½ in.	8 in.	10 in	12 in.	14 in.	16 in.	18 in.
Price.....	$0.80	$0.90	$1.00	$1.25	$1.75	$2.25	$2.75
Size.....	20 in.	24 in.	28 in.	32 in	36 in.	42 in.	48 in.
Price. ...	$3.25	$3.75	$4 50	$5.25	$6.25	$7.50	$9.00



Notes on Table on Opposite Page.

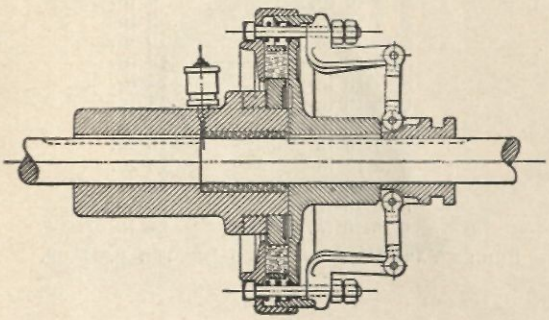
1.—The size of Clutch is indicated by the diameter of the Friction Disc.

2.—The table shows the largest size that the Clutch can be bored. In case the shaft should be larger than the sizes given in the table, a larger size Clutch must be used, although it may be larger than necessary for the work.

3.—The horse-power of a Clutch depends upon the speed at which it runs. The table gives the horse-power at 100 revolutions. At other speeds the power will be proportionate.

4.—We will guarantee the Clutch to drive a pulley as large as indicated in the table. The Clutch, of course, can be applied to smaller size pulleys, as may be desired.

5.—For high speeds it is advisable to use a Clutch large for the work, in order to get the most satisfactory results.



Price List of Cut-Off Couplings, Keyseated, Ready to Put On Shafts.

Diameter of Shaft.	Size of Clutch.	Capacity at 100 Rev's per min.	Space Required on Shafts.		Price.	Weight.
Inches.	Inches.	H. P.	Inches.		Dollars.	Pounds.
$1\frac{5}{16}$	5	$1\frac{3}{4}$	$3\frac{1}{2}$	$8\frac{1}{2}$	18.00	33
$1\frac{9}{16}$	$6\frac{1}{2}$	$2\frac{1}{4}$	4	$9\frac{1}{4}$	21.00	42
$1\frac{7}{16}$	8	5	$4\frac{1}{4}$	$10\frac{1}{8}$	26.00	68
$1\frac{11}{16}$	10	7	5	$11\frac{3}{4}$	35.00	115
$1\frac{15}{16}$	12	12	6	$14\frac{1}{4}$	45.00	202
$2\frac{3}{16}$	14	18	6	17	56.00	295
$2\frac{7}{16}$	16	25	$6\frac{1}{2}$	$17\frac{1}{2}$	75.00	367
$2\frac{11}{16}$	18	34	$6\frac{1}{2}$	$18\frac{1}{2}$	95.00	479
$2\frac{15}{16}$	20	45	7	$21\frac{1}{4}$	115.00	715
$3\frac{3}{16}$	24	65	$7\frac{3}{4}$	$22\frac{3}{4}$	185 00	1010
$3\frac{7}{16}$	28	85	$8\frac{1}{8}$	$25\frac{1}{2}$	215.00	1269
$4\frac{3}{16}$	32	112	9	$28\frac{1}{2}$	285.00	1762
$4\frac{15}{16}$	42	180	$11\frac{1}{2}$	$25\frac{1}{2}$	525.00	3425
$5\frac{1}{16}$	*36	284	$11\frac{1}{2}$	$23\frac{3}{4}$	575.00	3830

* Double Disc.

For additional charge for High Speeds Split Couplings, etc., see Notes on page 62.

PLAIN BRONZE BUSHING.

Inside Diameter.	Outside Diameter.	Length of Hub.	Net Price.
1 11-16 in.	2 3-16 in.	6 in.	$ 5.00
1 15-16 in.	2 7-16 in.	8 in.	6.20
2 3-16 in.	2 15-16 in.	10 in.	7.30
2 7-16 in.	3 3-16 in.	12 in.	9.50
2 11-16 in.	3 7-16 in.	14 in.	11.50
2 15-16 in.	3 15-16 in.	14 in.	14.00
3 3-16 in.	4 3-16 in.	16 in.	16.50
3 7-16 in.	4 7-16 in.	16 in.	18.50
3 15-16 in.	4 15-16 in.	18 in.	19 50
4 7-16 in.	5 7-16 in.	18 in.	21.50
4 15-16 in.	5 15-16 in.	20 in.	23.50
5 15-16 in.	6 15-16 in.	24 in.	27.00

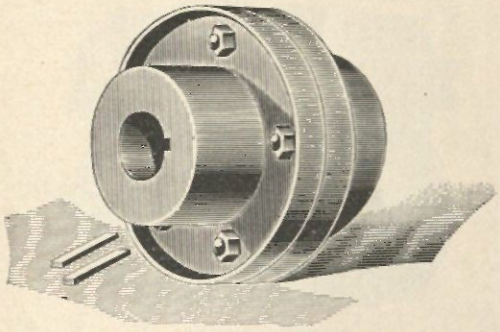
PRICES VARY ACCORDING TO LENGTH OF HUB.

Price List of Friction Clutches, Bored and Keyseated, Ready to Attach to Pulley or Other Hub.

Size.	Price.	Outside Diameter.	Space Required, Including movement	Largest Bore.	Will Drive Pulley as Large as		Capacity at 100 R. P. M.	Weight.
					Diam.	Face.		
Inches.	Dollars.	Inches.	Inches.	Inches.	Inches.		H. P.	Pounds.
5	12.00	7¾	6¼	1 1/16	10	3	1¼	22
6	15.00	9	6¾	1 3/16	12	4	2½	28
8	20.00	11	6⅞	2 7/16	18	5	5	46
10	27.00	13	8½	2 9/16	21	6	7	76
12	36.00	15½	10¼	3 1/16	27	8	12	142
14	48.00	18	12½	4 7/16	32	10	18	215
16	60.00	20½	13	4 9/16	35	12	25	255
18	75.00	22½	13½	5 1/16	42	14	34	351
20	95.00	25½	16½	5 3/16	50	16	45	544
24	150.00	29¾	17	6 7/16	60	18	65	810
28	180.00	34	19½	7 1/16	66	22	85	1050
32	230.00	39	21¾	7 9/16	72	24	112	1450
36	300.00	43	23½	8 1/16	78	26	142	2300
42	500.00	49½	25½	9 7/16	84	30	180	2800
48	800.00	58	26½	9 15/16	96	36	240	4300
*36	515.00	43½	23¾	8 7/16	108	42	284	3100
*42	700.00	50	26	9 7/16	120	48	360	4140
*48	1000 00	58	27¼	9 15/16	144	54	480	6000

* Double Disc.

NOTES.—Additional charge for High Speeds as follows: Over 350 revolutions per minute, 10 per cent. Over 600 revolutions per minute, 15 per cent.
For Split Clutches, write for prices.
For Shifter Straps and Levers, see Price List, page 59.



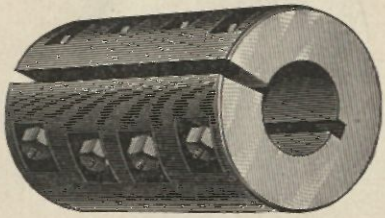
FLANGE OR PLATE COUPLINGS.

Turned, Faced and Finished with Bolts. Furnished Fitted with Reamed Holes, and Keyseated.

Couplings should never be placed further than two feet from bearings; nearer, if possible.

When shafts of different diameters are connected with couplings of this kind, price of the pair will be the same as if both shafts were of the larger diameter.

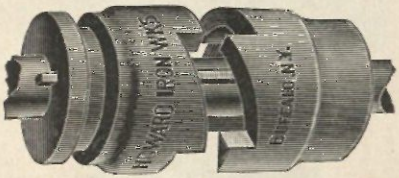
Diameter of Shaft in Inches.	Price per Pair, Not Fitted to Shafts.	Diameter of Shaft in Inches.	Price per Pair, Not Fitted to Shafts.
$\frac{15}{16}$	$7.50	3	$18.25
1	7.50	$3\frac{3}{16}$	21.75
$1\frac{3}{16}$	7.75	$3\frac{7}{16}$	25.25
$1\frac{7}{16}$	8.00	$3\frac{11}{16}$	29.25
$1\frac{1}{2}$	8.00	$3\frac{15}{16}$	33.25
$1\frac{11}{16}$	8.50	$4\frac{7}{16}$	43.25
$1\frac{15}{16}$	9.00	$4\frac{15}{16}$	54.75
2	9 00	$5\frac{7}{16}$	67.00
$2\frac{3}{16}$	10.50	$5\frac{15}{16}$	81.00
$2\frac{7}{16}$	12.50	$6\frac{7}{16}$	95.50
$2\frac{11}{16}$	15.25	$6\frac{15}{16}$	110.00
$2\frac{15}{16}$	18.25		



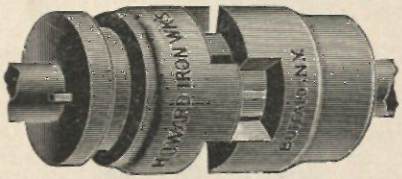
CLAMP OR COMPRESSION COUPLINGS.

When shafts of unequal diameter are coupled together, the large shaft is turned down to the size of the small shaft.

Diameter of Shaft in Inches.	Price.	Diameter of Shaft in Inches.	Price.
$1\frac{8}{16}$	$5.50	$2\frac{15}{16}$	$16.50
$1\frac{7}{16}$	6 00	$3\frac{8}{16}$	20.00
$1\frac{11}{16}$	7.00	$3\frac{7}{16}$	24.00
$1\frac{15}{16}$	8.00	$3\frac{11}{16}$	28.00
$2\frac{8}{16}$	9.00	$3\frac{15}{16}$	32.00
$2\frac{7}{16}$	10.75	$4\frac{8}{16}$	37.00
$2\frac{11}{16}$	13.00	$4\frac{7}{16}$	42.00



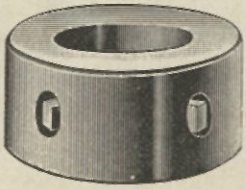
SPIRAL JAW, EITHER RIGHT OR LEFT HAND.



SQUARE JAW.

JAW OR CLUTCH COUPLINGS.

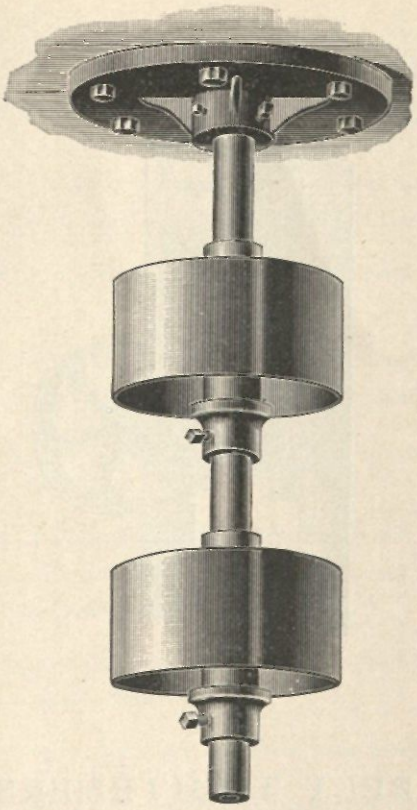
Diameter of Shaft in Inches.	Price Fitted.	Price Not Fitted.	Clamp Collar.	Shipping Lever.
1 3/8	$10.00	$7.00	$1.90	$5.00
1 7/16	12.00	8.00	2.25	6.00
1 1/2	12.75	8.50	2.70	7.00
1 5/8	13.50	9.00	3.00	8.00
1 3/4	15.75	11.25	3.40	9.00
1 7/8	18.75	14.25	3.75	10.00
2	23.25	18.50	4.25	11.00
2 1/16	27.75	22.75	4.50	12.00
2 1/8	37.50	30.00	5.25	14.00
2 3/16	48.75	39.00	6.00	16.00
2 1/4	65.50	52.00	6.75	18.00
2 5/16	87.00	70.00	7.50	20.00
2 3/8	115.00	95.00	8.25	22.00
2 7/16	155.00	130.00	9.00	24.00



IRON SET COLLARS.

These Set Collars are made of cast-iron, and are provided with a recess for the set screws, the head of which is below the surface, thus rendering the collar perfectly safe.

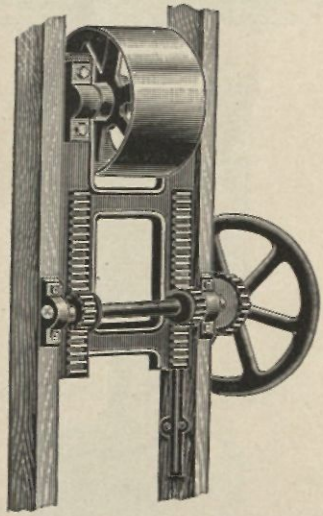
Bore.	Price, Each.	Bore.	Price, Each.
$\frac{15}{16}$	$0.70	$3\frac{3}{16}$	$2.70
$1\frac{3}{16}$	.80	$3\frac{7}{16}$	3.00
$1\frac{7}{16}$	1.00	$3\frac{11}{16}$	3.30
$1\frac{11}{16}$	1.20	$3\frac{15}{16}$	3.60
$1\frac{15}{16}$	1.40	$4\frac{7}{16}$	4.70
$2\frac{3}{16}$	1.60	$4\frac{15}{16}$	5.90
$2\frac{7}{16}$	1.80	$5\frac{7}{16}$	7.20
$2\frac{11}{16}$	2.10	$5\frac{15}{16}$	8.60
$2\frac{15}{16}$	2.40	$6\frac{7}{16}$	10.10
		$6\frac{15}{16}$	11.70



MULE STANDS.

When Line-Shaft Pulleys are Same Diameter and Shafts are on the Same Plane.

Size of Pulleys in Inches.	Length of Spindle in Inches.	Width of Belt in Inches.	Price.
12 x 5	48	4	$28.00
12 x 6	48	5	30.00
12 x 8	48	6	32.00
16 x 10	60	8	45.00
16 x 12	60	10	50.00
16 x 14	60	12	55.00



BELT TIGHTENERS.

No.	Length of Adjustment in Feet.	Size of Pulley. Diameter Face in Inches.	Diameter of Shaft in Inches.	Price with Iron Side Frames.
00	1½	12 x 9	1 1/16	$37.50
0	1⅝	18 x 12	1 1/16	50.00
1	2	24 x 14	1 15/16	70.00
2	3½	28 x 20	2 7/16	100.00
3	4	30 x 26	2 11/16	160.00
4	5	42 x 38	2 15/16	300.00

POINTS IN WHICH THE SCHLENKER BOLT CUTTER EXCELS.

1. The action of its Dies are the same as a lathe tool. They leave a clean and perfect thread with one passage over the Bolt.

2. The Dies open automatically when the required length of thread has been cut.

3. They are much cheaper than other Dies, can be ground when dull like a lathe tool, and recut many times before they are worn out.

4. They can be changed from one size to another in a moment without removing a screw, pin or bolt.

5. They will cut with equal facility right or left hand threads, square threads, coach threads or V threads—and will not vary half a thread in length on ten thousand bolts.

6. Any intelligent boy who can read figures can operate these machines as successfully as a high priced mechanic.

7. They save the oil by straining the iron chips from it.

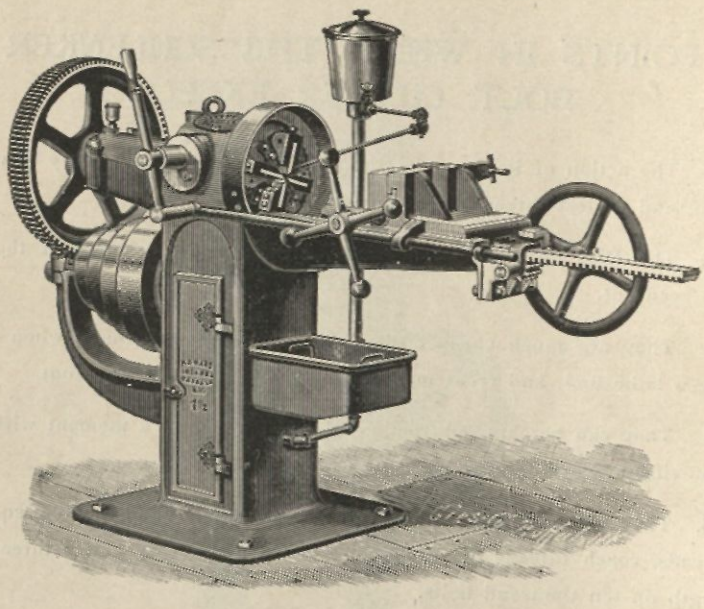
8. They have powerful Cut Gears, running with a wrought iron pinion.

9. The wearing parts are made of steel and carefully tempered, the bearings are large and can be adjusted to take up the wear.

10. They take crooked as well as straight work and tap nuts as well as cut bolts.

11. We test every machine before it leaves our works and guarantee it to be perfect in every particular.

12. The workmanship and finish of these machines is the best, and their strength and simplicity, both in construction and operation, recommends them to all practical mechanics wherever a labor and time saving machine is desired.



No. 1½ SCHLENKER 4-DIE BOLT CUTTER.

To cut from ¼ to and including 1½ inch, price including Counter Shaft, 1 set of Dies, and Master Taps, complete, ... $325.00

Cone Pulley, 8, 10, 12, 14 inch diameter, 3 inch face.

Counter Shaft Pulleys, 16 inch diameter, 4½ inch face.

Speed of Counter Shaft, 175 to 225 revolutions per minute.

Floor space, 2 ft. x 5 ft. 6 in ; weight, 1,350 pounds.

Extreme length of thread without shifting Bolt, 20 inches.

Extra Steel Chucks, per set of 4, ... $9.00
Extra Blank Dies, per set of 4, ... 2.00
Cutting Dies and Fitting to Chucks, ... 2.00

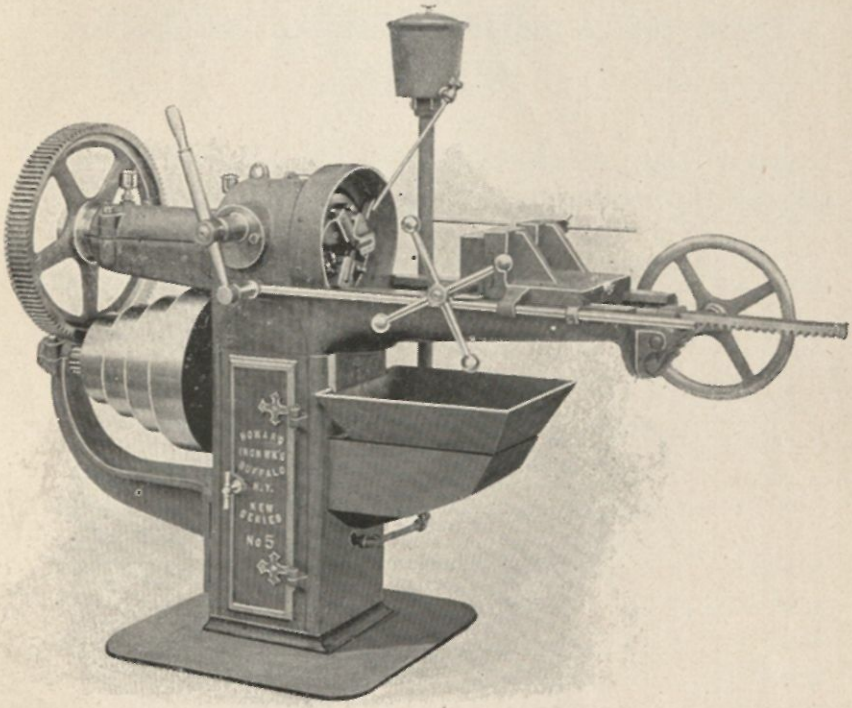
We do not furnish Nut Taps with machines.

When ordering Chucks or Dies give size of machine, size of Bolt, number of threads per inch and style of threads.

Dies must be cut in the Chucks in which they are to be used.

261 62

NEW SERIES.



SCHLENKER 3-DIE BOLT CUTTER.

MADE IN SIZES 5 AND 5½.

See pages 74 and 75 for prices.

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OUR No. 2½ SCHLENKER 4-DIE BOLT CUTTER

is similar in all respects to the No 1½, except, being larger, it is designed to cut Bolts from ⅝ to and including 2½ inches in diameter, and is provided with an Oil Pump.

Price, including Counter Shaft, 1 set Dies and Master Taps, complete, $450.00

Cone Pulley, 10, 13, 16 and 19 inches diameter, 3 inch face.

Counter Shaft Pulleys, 19 inch diameter, 4½ inch face.

Speed of Counter Shaft, 175 to 225 revolutions per minute.

Floor space, 2 ft. 6 in. x 6 ft. 6 in.; weight, 2,000 pounds.

Extreme length of thread without shifting Bolt, 23 inches.

Extra Steel Chucks, per set of four, from	⅝	to	1¼	inch,	. . .	$ 9.00
" " " "	1⅜	to	2	"	. . .	10.50
" Dies Blank, " "	⅝	to	1¼	"	. . .	2.00
" " " "	1⅜	to	2	"	. . .	3.75
Cutting and fitting Dies to Chucks, per set,					. . . . .	2 00

We do not furnish Nut Taps with machines.

When ordering Chucks or Dies give size of machine, size of Bolt and number of threads per inch and style of threads.

Dies must be cut in the Chucks in which they are to be used.

OUR No. 3 SCHLENKER 4-DIE BOLT CUTTER

is similar to those on the preceding pages, only made much heavier and stronger in every way.

It is designed to Cut Bolts ranging in size from $\frac{3}{8}$ to 3 inches diameter, and is provided with an Oil Pump.

Price, including Counter Shaft, 1 set Dies and Master Taps, complete, ... $775.00

Cone Pulley, 9, 11, 13 and 15 inch diameter, 3 inch face.

Counter Shaft Pulley, 19 inch diameter, $4\frac{1}{2}$ inch face.

Speed of Counter Shaft, from 175 to 225 revolutions per minute.

Floor space, $2\frac{1}{2}$ ft. x 8 ft.; weight, 2,750 pounds.

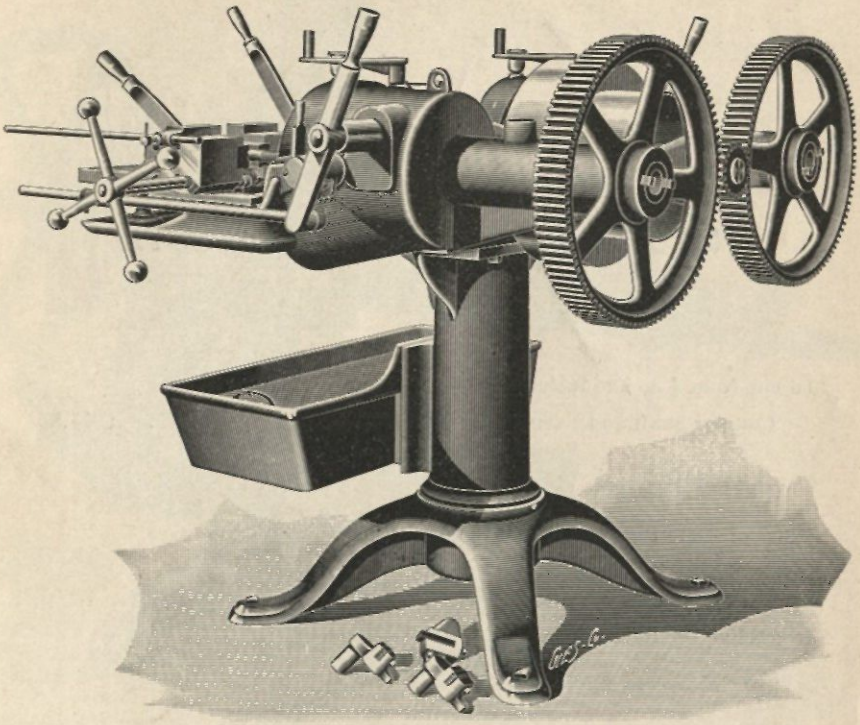
Extreme length of thread without shifting, 34 inches.

Extra Steel Chucks, per set of four, from	$\frac{3}{8}$	to $1\frac{1}{4}$	inch,	. .	$ 9.00
" " " " "	$1\frac{3}{8}$	to $1\frac{3}{4}$	"	. .	10.50
" " " " "	$1\frac{7}{8}$	to $2\frac{1}{4}$	"	. .	12.00
" " " " "	$2\frac{3}{8}$	to 3	"	. .	13 50
" Dies, Blank, " " "	$\frac{3}{8}$	to $1\frac{1}{4}$	"	. .	2.00
" " " " "	$1\frac{3}{8}$	to $1\frac{3}{4}$	"	. .	3.75
" " " " "	$1\frac{7}{8}$	to $2\frac{1}{4}$	"	. .	4 50
" " " " "	$2\frac{3}{8}$	to 3	"	. .	5.25
Cutting and Fitting Dies to Chucks, per set of four, up to 2 inches,					2.00
" " " " "			from 2 in. to 3 in.		3.00

We do not furnish Nut Taps with machines.

When ordering Chucks or Dies give size of machine, size of Bolt and number of threads per inch, and style of thread.

Dies must be cut in the Chucks in which they are used.



No. 4 SCHLENKER DOUBLE-HEADED 3-DIE BOLT CUTTER AND NUT TAPPER.

Complete with 16 sets of Dies and 1 set of Master Taps, to cut from ¼ to and including ⅝ inch Bolts, price, including Counter Shaft, . $400.00

Weight, 1 550 pounds

Size of Cone Pulley, 10-14 inch diameter, 4 inch face.

Size of Counter Shaft Pulley, 12 inch diameter, 4½ inch face.

Speed of Counter Shaft, 150 revolutions per minute.

Floor space, 3½ x 4½ feet.

Extreme length of thread without shifting, 4 inches.

Extra Steel Chucks, per set of three, ...	$6.00
" Dies, Blank, per set of three, ...	1.50
Cutting and fitting Dies to Chucks, ...	2.00

We do not furnish Nut Taps with machines.

When ordering Chucks or Dies give size of machine, size of Bolt and number of threads per inch, and style of threads.

Dies must be cut in the Chucks in which they are used.

No. 5 BOLT CUTTER, COMPLETE WITH DIES.

To cut from ¼ to and including 1⅛ inch diameter, price including Counter Shaft and 1 set Master Taps, ... $275.00

Weight, 950 pounds.

Size of Cone Pulley, 6, 9 and 12 inch diameter, with 3 inch face.

Size of Counter Shaft Pulley, 12 inch diameter, 4½ inch face.

Speed of Counter Shaft, 175 to 200 revolutions per minute.

Floor Space, 2 ft. x 5 ft. 6 in

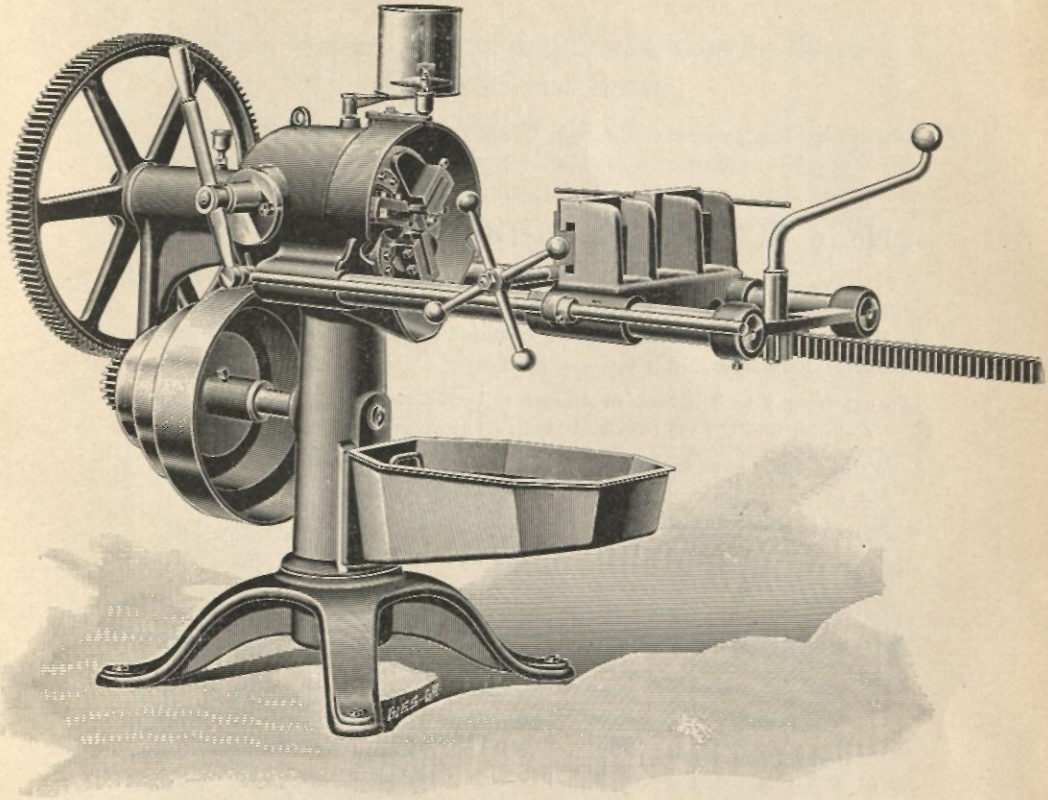
Extreme length of thread without shifting Bolt, 18 inches.

Extra Steel Chucks from ¼ to 1⅛ inch, inclusive, per set of three, .	$6.75
" Dies Blank " " " " .	1.50
Cutting and Fitting Dies to Chucks, " " .	2.00

We do not furnish Nut Taps with machines.

When ordering Chucks and Dies give size of machine, size of Bolt and number of threads per inch and style of threads.

Dies must be cut in the Chucks in which they are used.



No. 5½ SCHLENKER 3-DIE BOLT CUTTER.

To cut from ⅜ to 2 inch diameter, inclusive, price including Counter Shaft, 1 set Dies and Master Taps, complete, . . $400.00

Weight, 1700 pounds.
Size of Cone Pulley, 10, 14 and 18 inch diameter, 3 inch face.
Size of Counter Shaft Pulleys, 16 inch diameter, 4½ inch face.
Speed of Counter Shaft, 175 to 200 revolutions per minute.
Floor space, 2 ft. 6 in. x 6 feet.
Extreme length of thread without shifting Bolt, 23 inches.

Extra Steel Chucks, per set of three,				from ⅜	to 1⅜	inch, inclusive,	$ 6 75
"	"	"	"	1½	to 1¾	" "	7.50
"	"	"	"	1⅞	to 2	" "	8.25
"	Blank Dies,	"	"	⅜	to 1⅜	" "	1.50
"	"	"	"	1½	to 1¾	" "	2.50
"	"	"	"	1⅞	to 2	" "	3.00
Cutting and fitting Dies to Chucks, per set,							2.00

We do not furnish Nut Taps with machines.
When ordering Chucks and Dies give size of machine, size of Bolt number of threads per inch and style of threads.
Dies must be cut in the Chucks in which they are used.

No. 6 SCHLENKER 3-DIE BOLT CUTTER.

(Style of Machine is similar to cut of 1⅛ shown on page 70.)

Made extra heavy throughout and designed to cut Bolts from ⅝ to 3 inches diameter, inclusive, and is fitted with oil can.

To cut from ⅝ to 3 inches in diameter, inclusive, price, including Counter Shaft, 1 set Dies and Master Taps, complete, . . $750.00

Weight, 2,600 pounds.

Size of Cone Pulley, 9, 11, 13, 15 inches diameter, 3-inch face.

Size of Counter Shaft Pulleys, 19 x 4½ diameter.

Speed of Counter Shaft, 175 to 200 revolutions per minute.

Floor space, 2½ x 8 feet.

Extreme length of thread without shifting bolt, 23 inches.

Extra Steel Chucks, per set of three, to cut from					⅝ to 1⅛	inch, inclusive,	$6.75
"	"	"	"	"	1¼ to 1⅝	" "	7.50
"	"	"	"	"	1⅞ to 2¼	" "	8.25
"	"	"	"	"	2⅜ to 3	" "	9.00
"	Blank Dies,	"	"	"	⅝ to 1⅛	" "	1.50
"	"	"	"	"	1¼ to 1⅝	" "	2.50
"	"	"	"	"	1⅞ to 2¼	" "	3.00
"	"	"	"	"	2⅜ to 3	" "	4.00
Cutting and fitting Dies to Chucks, per set of three, up to 2 inches, .							2.00
"	"	"	"	"	from 2 in. to 3 in.,		3.00

We do not furnish Nut Taps with machines.

When ordering extra Chucks and Dies give size of machine, size of Bolt, number of threads per inch, and style of threads.

Dies must be cut in the Chucks in which they are used.

Horse-Powers of Iron and Steel Shafts for Given Diameter and Speed.

Formula for the horse-power which properly designed and erected iron and steel line shafts will transmit at various revolutions. Multiply the cube of the diameter of the shaft by the revolutions per minute, and divide by the constant eighty; the quotient equals the horse-power transmitted

EXAMPLE.—What horse-power will a 3-inch shaft transmit at 100 revolutions per minute? The cube of 3 is $27 \times 100 = 2{,}700 \div 80 = 33.75$.

The following table gives the horse-power which shafting of various diameters will transmit at different speeds:

Dia. of Shaft in Inches.	Revolutions per Minute.									
	100	125	150	175	200	225	250	300	350	400
	H. P.	H. P.	H. P.	H. P.	H. P.	H. P.	H. P.	H. P.	H. P.	H. P.
$1\frac{5}{16}$	1.2	1.4	1.7	2.1	2.4	2.6	3.1	3.6	4.3	5.0
$1\frac{3}{8}$	2.4	3.1	3.7	4.3	4 9	5.5	6.1	7.3	8.5	9.7
$1\frac{7}{16}$	4.3	5.3	6.4	7.4	8.5	9.5	10.5	12.7	14.8	16.9
$1\frac{1}{2}$	6.7	8.4	10.1	11.7	13.4	15.1	16.7	20.1	23.4	26 8
$1\frac{9}{16}$	10.0	12.5	15.0	17.5	20.0	22.5	25.0	30.0	35.0	40.0
$2\frac{3}{16}$	14.3	17.8	21.4	24.9	28.5	32.1	35.6	42.7	49.8	57.0
$2\frac{7}{16}$	19.5	24.4	29.3	34.1	39.0	44.1	48.7	58.5	68.2	78.0
$2\frac{1}{2}$	26.0	32.5	39.0	43.5	52.0	58.5	65.0	78.0	87.0	104.0
$2\frac{5}{16}$	33.8	42.2	50.6	59.1	67.5	75.9	84.4	101.3	118.2	135.0
$3\frac{3}{16}$	43.0	53.6	64.4	75.1	85.8	96.6	107.3	128.7	150.3	171.6
$3\frac{7}{16}$	53.6	67.0	79.4	93.8	107.2	120.1	134.0	158.8	187.6	214.4
$3\frac{1}{2}$	65.9	82.4	97.9	115.4	121.8	148.3	164.8	195.7	230.7	243.6
$3\frac{5}{16}$	80.0	100.0	120.0	140.0	160.0	180.0	200.0	240.0	280.0	320.0
$4\frac{7}{16}$	113.9	142.4	170.8	199.3	227.8	256.2	284.7	341.7	398.6	455.6
$4\frac{5}{8}$	156.3	195.3	234.4	273.4	312.5	351.5	390.6	468.7	546.8	625.0
$5\frac{7}{16}$	207.9	260.0	311.9	363.9	415.9	459.9	520.0	623.9	727.9	830.0
$5\frac{5}{8}$	270.0	337.5	405.0	472.5	540.0	607.5	675.0	810.0	945.0	1080.0
$6\frac{7}{16}$	343.3	429.0	514.9	600.7	686.5	772.4	858.0	1029.0	1201.0	1372.0
$6\frac{5}{8}$	428.8	535.9	643.1	750 3	847.5	964.7	1071.9	1286.0	1500.0	1695.0
$7\frac{5}{8}$	640.0	800.0	960.0	1120.0	1280.0	1440.0	1600.0	1920.0	2240.0	2560.0
$8\frac{5}{8}$	911.0	1139.0	1366.0	1594.0	1822.0	2050.0	2278.0	2733.0	3189.0	3645.0

For head-shafts, or those subjected to extra or unusual strains, divide by 100 instead of 80.

TABLE OF THE HORSE-POWER OF TRANSMISSION ROPE.

BY C. W. HUNT.

The working strain is 800 lbs. for a 2-inch diameter rope, and is the same at all speeds, due allowance having been made for loss by centrifugal force.

Diameter Rope in Inches.	Speed of the Rope in Feet per Minute.										Smallest Diameter Pulleys in Inches.
	1500	2000	2500	3000	3500	4000	4500	5000	6000	7000	
¾	3.3	4.3	5.2	5.8	6.7	7.2	7 7	7.7	7.1	4.9	30
⅞	4.5	5.9	7.0	8.2	9.1	9.8	10.8	10.8	9.3	6.9	36
1	5.8	7.7	9.2	10.7	11.9	12.8	13.6	13 7	12.5	8 8	42
1¼	9.2	12.1	14.3	16.8	18 6	20.0	21.2	21.4	19.5	13.8	54
1½	13.1	17.4	20.7	23.1	26.8	28.8	30.6	30.8	28.2	19 8	60
1¾	18.0	23.7	28.2	32 8	36.4	39 2	41.5	41.8	37.4	27.6	72
2	23.1	30.8	36.8	42.8	47.6	51.2	54.4	54.8	50.0	35.2	84

HORSE-POWER BELTING WILL SAFELY TRANSMIT.

Computation of horse-power, in the following table, is based on the assumption that the belts will run on pulleys of medium size, and nearly horizontally, and the semi-circumference of the smallest pulley has been regarded as the arc of contact; and while a double belt may, under favorable conditions, transmit twice the power of a single belt, yet, for ordinary work, we consider an increase of 50 per cent. a fair allowance.

Width of Belt in Inches.	Horse Power Per 100 Feet Velocity of Belt.		Width of Belt in Inches.	Horse-Power Per 100 Feet Velocity of Belt.	
	Single Belt.	Double Belt.		Single Belt.	Double Belt.
1	.09	.18	12	1.09	2.18
2	.18	.36	14	1.27	2.55
3	.27	.55	16	1.45	2.90
4	.36	.73	18	1.64	3.28
5	.45	.91	20	1.82	3.64
6	.55	1.10	22	2.00	4.00
7	.64	1.28	24	2.18	4.36
8	.73	1.46	28	2.55	5.10
9	.82	1.64	32	2.91	5 82
10	.91	1.82	36	3.27	6.54
11	1.00	2.00	40	3.64	7.27

All belts should run slack; and if more power is required, increase the belt speed by using larger pulleys.